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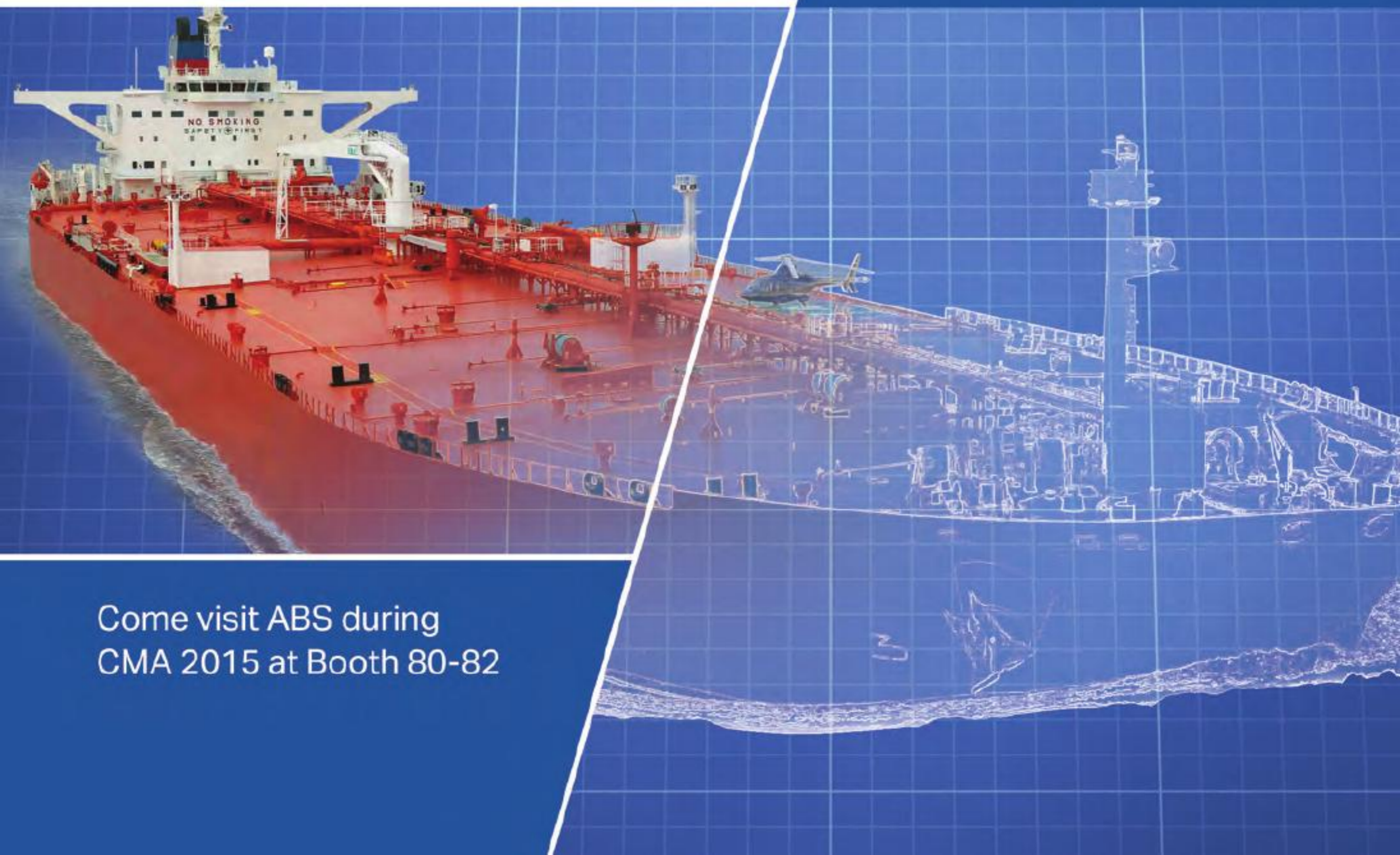
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# LNG PICTURE STARTS TO TAKE SHAPE IN U.S.



John R. Snyder, Publisher & Editor  
jsnyder@sbpublish.com

**IT'S HARD TO BELIEVE** that it has been more than two years since TOTE announced it would be building the world's first containerships to burn Liquefied Natural Gas as fuel. On April 18, however, the first of the two Marlin Class ships will be launched and christened at NASSCO in San Diego. The first ship is expected to enter service between the Port of Jacksonville and Puerto Rico later this year, followed by her sister ship next year.

Other LNG marine milestones are also falling into place. As we highlight this month in our Update section, the dual fuel Platform Supply Vessel *Harvey Energy* is now working for Shell in the Gulf Of Mexico, after her delivery from the Gulf Coast Shipyard Group, and the keel has been laid at Davie Shipyard for the first LNG-fueled ferry for STQ to be built in North America, while another one, *F.-A.-Gauthier*, is en route from Fincantieri from Italy.

The "chicken and the egg dilemma" is also being addressed in the U.S.—albeit, too slowly for some—with investment by private companies in small reliquefaction plants and LNG refueling infrastructure.

WesPac has ordered a 2,200 m<sup>3</sup> LNG bunker barge from Conrad Shipyard's Orange, TX, facility, with an option for a second in support of TOTE's Orca Class RO/RO vessels. WesPac and Pivotal LNG are developing a reliquefaction at the port that is expected to open in mid-2016 to support TOTE's ships.

Harvey Gulf's *Harvey Energy* is being refueled at the Port of Fourchon by tanker truck and the Ports of Long Beach and Los Angeles are going to make LNG available.

Unlike the U.S., the European Union is taking a direct approach to supporting the adoption of LNG as a marine fuel, providing financial support through grants from its

TEN-T program that calls for the availability of LNG bunkers at all major European seaports by 2020 and inland waterway ports by 2025. Read "First Adopters" in this issue for additional insight.

Still you might ask, with the price of oil plummeting, does LNG as a marine fuel make good business sense? While it is not the magic bullet for all, it sure makes sense for TOTE's Sea Star Line, which will operate in an Emissions Control Area on its trade route between Jacksonville and Puerto Rico, and other Jones Act operators such as Crowley and Matson Navigation.

LNG does come with its complexities, from special cryogenic handling and equipment requirements, to a higher upfront capital investment, larger tanks, and specialized crew training. How will the industry handle these challenges? We'll dig deeper in our next issue.



## MARITIME TRIVIA

**Trivia Question #24:** Who organized the first humane society with the mission of saving life from the perils of the sea?

*The first sailor or lubber who correctly answers the Maritime Trivia question will receive a color J. Clary collector print. Email your guess to: marineart@jclary.com*

**March's trivia question:** Once an old but strictly observed custom, who rang the ship's bell on December 31st? Answer: The oldest man on the ship, be he admiral or jack-of-the-dust, would strike eight bells at midnight, on December 31st. This was immediately followed by eight bells for the New Year and always struck by the youngest boy on board.

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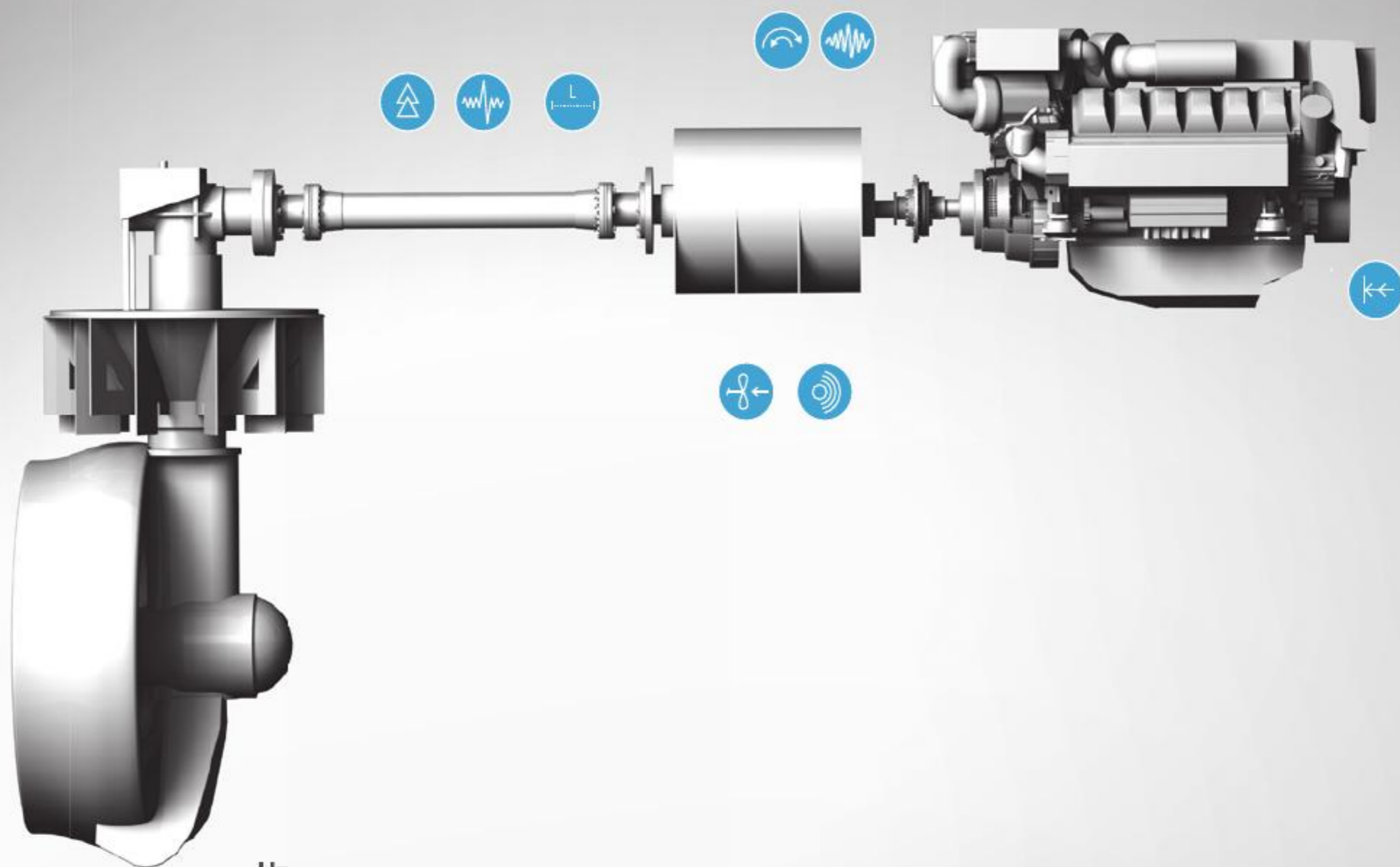
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# USACE APPROPRIATIONS BENEFIT THE NATION

THE RELEASE OF PRESIDENT OBAMA'S budget request for Fiscal Year 2016 in February was disappointing—but not all that surprising. While touting the importance of the nation's infrastructure, the budget proposed \$4.732 billion for the U.S. Army Corps of Engineers' Civil Works program, a 13.25% cut from the \$5.454 billion FY'15 appropriation for the program. It also reduced by 28.5% the Army Corps of Engineers' Construction account, from FY15's \$1.639 billion to a proposed \$1.172 billion. The Administration proposed \$2.710 billion for Operations and Maintenance (O&M), \$110 million more than the Administration requested last year for this account, but a \$198.5 million cut (6.8%) from what Congress appropriated for the current fiscal year.

Of special concern is that the Administration request for critical navigation projects supported by the Inland Waterways Trust Fund (IWTF) was more than \$100 million below what could be supported by revenues going into the Trust Fund.

The budget also requested that only \$915 million be appropriated from the Harbor Maintenance Trust Fund (HMTF), far below expected revenues into the Trust Fund for FY 2016, and significantly less than the target level for FY16 in the Water Resources and Reform Development Act (WRRDA). This level would leave a balance of just under \$10 billion in the HMTF on September 30, 2016.

The call immediately went out from Waterways Council, Inc. (WCI) to its members to reach out to their Members of Congress to call for higher appropriations levels for the benefit of our nation's inland waterways and its critical infrastructure. March 18 was the deadline for the House Energy & Water Development Appropriations Subcommittee to receive requests for FY '16, and the Senate Energy & Water Appropriations Subcommittee deadline was not available at press time but would likely be close to the same date.

WCI's asks for FY '16 are:

- Appropriate a level of construction funding for the Corps to ensure that the Inland Waterway Trust Fund (IWTF) funds for the inland waterway modernization,

replacement, rehabilitation, & expansion projects are maintained at the highest level (\$360 million) that can be supported by the inland waterway diesel tax revenues expected to be received for FY 2016 by Treasury for the IWTF;

- Appropriate and, if possible, increase the Corps of Engineers' Operations & Maintenance (O&M) account funding level of \$2.9 billion that was provided in FY 2015 to \$3 billion Inland Waterways Trust Fund billion in FY 2016 for the operations and maintenance activities of the Corps including those affecting inland and coastal navigation throughout the nation;

- Provide a total of \$10 million in FY 2016 from the Investigations account of the Corps of Engineers to continue pre-construction engineering and design (PED) for the Navigation & Ecosystem Sustainability Program (NESP)—Upper Mississippi River & Illinois Waterway System as authorized in Title VIII of the Water Resources Development Act of 2007 (P.L. 110-114); and,

- Reach the Harbor Maintenance Trust Fund (HMTF) Target level of \$1.25 billion for FY '16 for the benefit of our nation's ports and channels.

With 566.7 million tons of freight valued at \$216 billion moving on our inland waterways system in 2013, efficient appropriations levels for the locks and dams that facilitate that commerce is a wise investment.



Michael J. Toohey, President/CEO,  
Waterways Council, Inc.

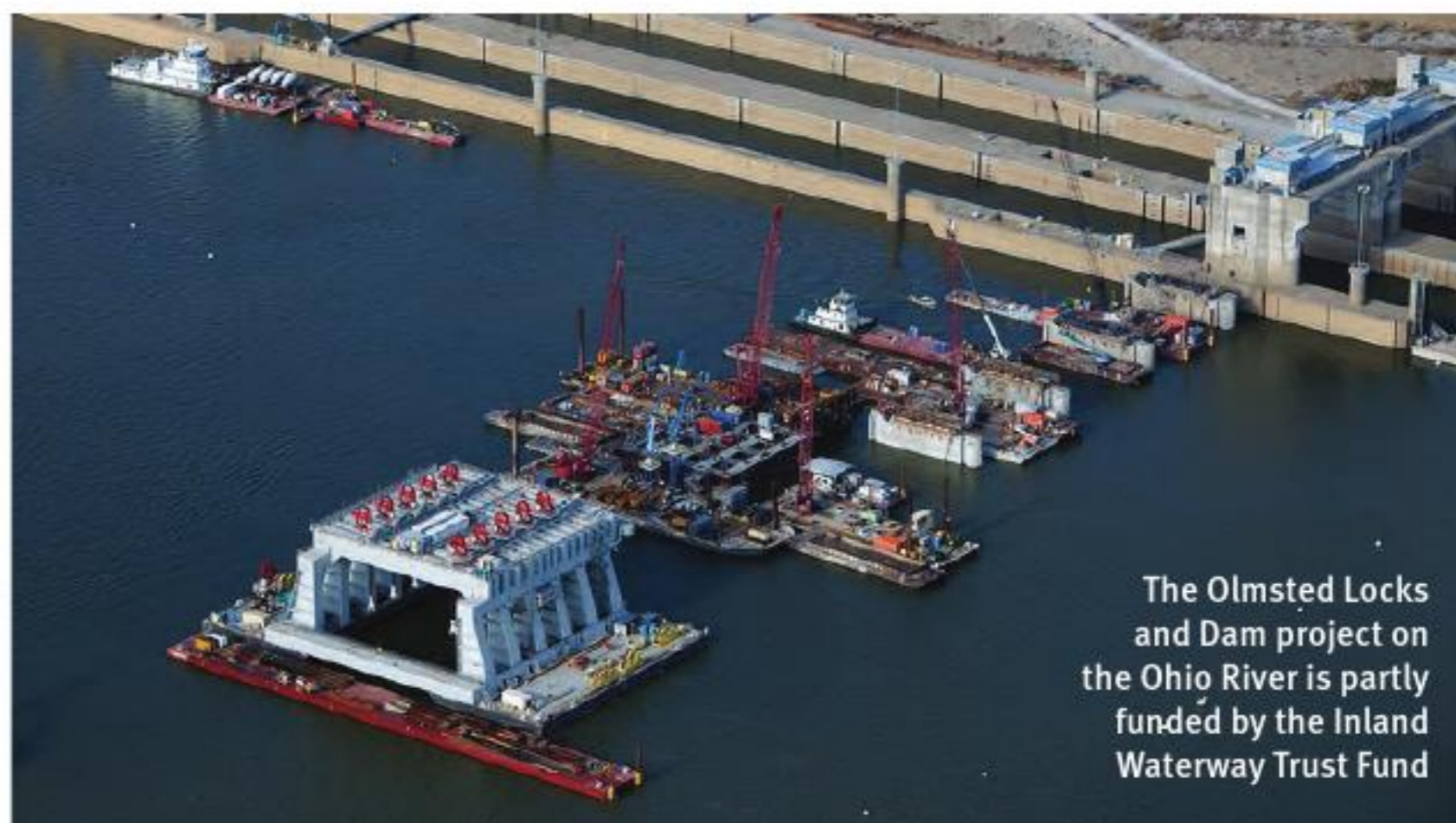
Investment in the inland waterways returns more than \$100 billion annually to the nation's economy. In fact, a new National Waterways Foundation-commissioned study by the University of Tennessee and the University of Kentucky, "Inland Navigation in the United States: An Evaluation of Economic Impacts and the Potential Effects of Infrastructure Investment," underscores this statement. The study examines the waterways' national economic return on investment and the need for, and benefits of, an accelerated program of waterways system improvements that sustain and create American jobs.

If 21 priority navigation projects already authorized could be completed at an estimated total cost of just \$5.8 billion, the 20-year sum of related economic output activity would exceed \$82 billion. That is more than a 14 to 1 return for our U.S. economy.

And the importance of the inland waterways will only grow stronger as our world population increases. World buyers look to America for the most cost-competitive grain that is made such by our waterways transportation system.

If Marine Log readers are inclined, please reach out to your Members of Congress with WCI's asks for FY '16. It will make a difference for our inland waterways and America's economic prosperity. Thank you!

[www.waterwayscouncil.org](http://www.waterwayscouncil.org)



The Olmsted Locks and Dam project on the Ohio River is partly funded by the Inland Waterway Trust Fund

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## HARVEY ENERGY begins work for Shell

**THE FIRST LNG-FUELED** vessel operating in the United States, the Harvey Energy, is now fully in service. The 310 ft vessel made its debut in the waters of the Gulf of Mexico last month and began performing services for Shell Upstream America's deepwater operations.

Designed by Vard Marine, Inc., and built by Gulf Coast Shipyard Group (GCSG), Gulfport, MS, the Harvey Energy is the first in a series of six LNG-fueled PSVs for Harvey Gulf International Marine.

The PSV is equipped with three dual-fuel Wärtsilä 34 DF engines. Running on 99% LNG fuel, the vessel is able to operate for seven days before requiring refueling. Refueling will take place at Harvey Gulf's new LNG bunkering facility at Port Fourchon in Louisiana. The LNG facility at the port provides easy access to more than 600 oil and gas rigs and platforms.

The environmentally friendly Harvey Energy meets the criteria of the ABS

Enviro+, Green Passport notation. The PSV also meets the new Tier IV sulfur and nitrogen oxide emissions regulations, to meet North American Emission Control Area (ECA) requirements.

The 5,150 dwt vessel is capable of carrying 253,000 gal of fuel oil, 18,000 bbls of liquid mud, 1,600 bbls of methanol, 10,250 ft<sup>3</sup> of dry cement and 78,000 gal of LNG fuel.

Calling the Harvey Energy a great source of pride for his employees, John Dane III, GCSG President says, "The vessel represents the highest form of meeting market, regulatory and environmental demand with solutions for each."

Shane Guidry, Harvey Gulf International Marine Chairman and CEO, says the Harvey Energy is "an example of Harvey Gulf's commitment to its customers and the environment to provide the most affordable, innovative, environmentally friendly technology solutions to meet their business demands."

## BIZ NOTES

### Vigor Industrial and Kvichak merge

**VIGOR INDUSTRIAL** continues to expand its presence in the U.S. Pacific Northwest. The shipbuilding giant inked a deal to merge with Seattle-based boat builder Kvichak Marine Industries.

Under the terms of the agreement, Kvichak will become a wholly owned subsidiary of Vigor. Meanwhile, Kvichak's owners Jim Meckley, Brian Thomas and Keith Whittemore, will join Vigor as shareholders and members of Vigor's leadership team.

The addition of Kvichak to Vigor's family of companies diversifies the shipbuilder's product line; Kvichak has a solid reputation in the design and fabrication of aluminum workboats, shipbuilding, and boat building for commercial, state, regional and federal government authorities and agencies. For instance, the boat builder has a history in the commercial fisheries market and recently completed, as part of its partnership with Marinette Marine Corporation, the Response Boat-Medium newbuild program for the U.S. Coast Guard.

"Kvichak brings amazing fabrication talent to our company," says Vigor CEO and owner Frank Foti. "Infusing those fabrication genetics into our broader operations is what industrial evolution is all about."

The transaction follows a similar one Vigor conducted in 2014 when it merged with Oregon Iron Works (OIW). The mergers are expected to generate more jobs in the region. In total, Vigor and its family of companies employ 2,500 people in Alaska, Oregon and Washington.

## VENEZUELA ORDERED TO PAY Tidewater \$62 million in compensation

**THE WORLD'S BANK** International Center for Settlement of Investment Disputes (ICSID) has ordered the country of Venezuela to pay Tidewater more than \$62 million in compensation, including accrued interest and costs. The fine is the result of Venezuela's 2009 seizure of 11 offshore service vessels after signing a law to nationalize them.

The tribunal concluded that the principal amount of the compensation to Tidewater would be \$46.4 million, plus \$13.9 million in interest (interest accrued from May 2009 to the date of the award March 2015). Although each party must pay an equal share of the

costs of the case, Tidewater must be paid \$2.5 million in partial reimbursement of its costs in the merits phase of the proceedings.

While Venezuela has to pay Tidewater, the decision could be seen as a victory for the South American country since Tidewater was originally seeking \$234 million—and at the time Venezuela owed the company \$45 million in unpaid invoices.

"The much higher amounts claimed were rejected because the tribunal found that the nationalization was lawful," lawyer George Kahale, who represented Venezuela in the case, told *Reuters*.

According to *Reuters*, however, while the payout with lower, Venezuela is hoping to further reduce it. Venezuela's Oil Minister Asdrubal Chavez told state media, "We will pay what we have to pay, although there is always the possibility of an appeal. We are going to continue working because this is an amount that we can still reduce."

The case with Tidewater is just one of many against Venezuela. In the past six months the ICSID has awarded a total of \$3 billion awards against the country, including \$1.6 billion to ExxonMobil. More cases are currently in the pipeline.

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The Kim M. Bouchard  
launched at VT Halter Marine



## VT HALTER MARINE launches ATB tug for Bouchard

**VT HALTER MARINE**, Inc. has launched Kim M. Bouchard, the first of two tugs being built for Bouchard Transportation Co., Inc., Melville, NY. The tugs are part of Bouchard's fleet expansion program.

The 10,000 hp twin screw tug measures 625 ft x 91 ft x 47 ft and has a 250,000 bbl capacity. Kim M. Bouchard is certified by the U.S. Coast Guard, and classed by ABS as an +A1 Towing Vessel, Dual Mode ATB, USCG Subchapter M. Equipped with Intercon Coupler System, the tug will be paired with Barge B. No. 270. The barge, both ABS and USCG certified for Jones Act service, will transport liquid petroleum.

Construction of the unit began January

2014 and delivery is scheduled for June 2015.

"It is with great pride that we launch another quality-built tug," says Bill Skinner, Chief Executive Officer, VT Halter Marine. "We look forward to joining her with Barge B. No. 270, as this is one of the most efficiently built ATB units for the Jones Act trade."

Besides the Kim M. Bouchard, Bouchard Transportation's ongoing fleet expansion program includes six vessels currently being built at VT Halter Marine, including two 130 ft ATB tugs. The tugs will be classed by ABS as +A1 Ocean Towing, Dual Mode ATB, USCG Subchapter C. Delivery on the 130 ft tugs is expected January and May 2016.

## MAERSK LINE to add seven 3,600 TEU boxships

**MAERSK LINE HAS SIGNED** a contract with COSCO Shipyard Co., Ltd, to build seven 3,600 TEU container ships—with an option for two additional vessels. The 200 m vessels will be delivered between April 2017 and November 2017.

The new COSCO-built vessels will sail on marine gas oil (MGO), making them compliant with ECA regulations that went into force in Northern Europe on January 1, 2015. The Northern Europe ECA limits SOx to 0.10%.

The boxships, which will be built to transit through sea ice, will be operated by Seago Line, Maersk's fully owned container shipping line dedicated to short-sea services in Europe and throughout the Baltic and North Sea regions.

The order marks the first step in Maersk Line's five-year program to invest \$15 billion in newbuilds, retrofits, containers and other equipment that will help the line meet growing industry demand and make the line more efficient—with the new vessels replacing less efficient ships.

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## BAE EXPANDS, adds new dry dock at San Diego yard

**DEMONSTRATING** its commitment to the region, BAE Systems' San Diego, CA, shipyard is investing \$100 million in a new floating dry dock and a number of infrastructure improvements at the yard to increase employment in the region and expand its capabilities. The new dry dock will measure 950-feet long and 205-feet wide, and will have a lifting capacity of 55,000 tons.

The expansion of its dry docking capabilities is expected to support current and future Navy surface ship repair, maintenance, and modernization, and will accommodate a variety of vessels including cruisers, destroyers, amphibious assault ships, mine countermeasures ships and both variants of the Littoral Combat Ship (LCS).

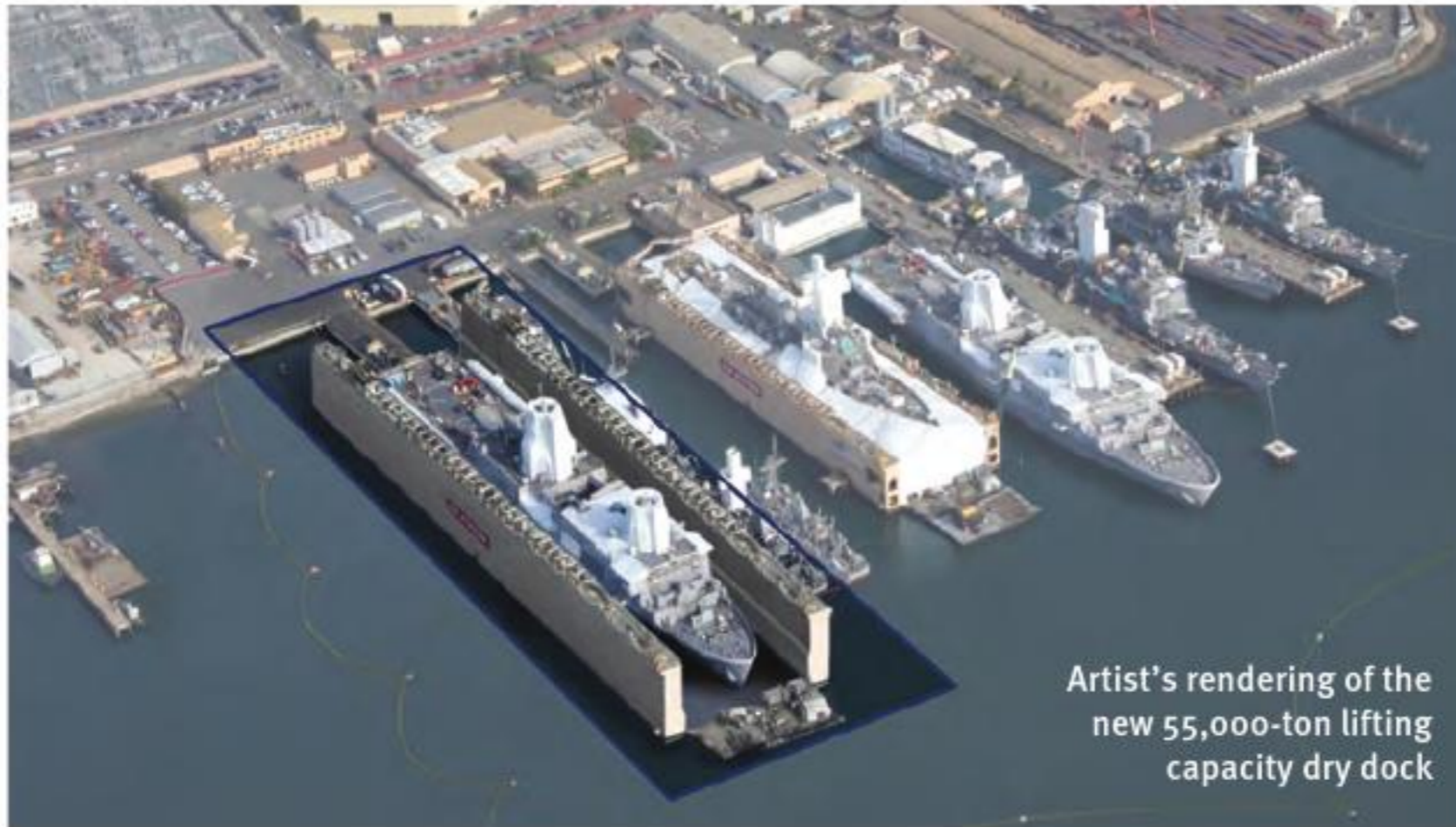
Expected to be operational in early 2017, the dry dock will be the company's largest in the United States. It will also be the company's greenest, employing several

environmental design features, including LED lighting, electric cranes, air-cooled emergency generators, a zero discharge closed-loop salt water system, and storm water recovery systems.

BAE Systems made the announcement during a ribbon-cutting ceremony dedicating a new 415 ft x 64 ft pier at the shipyard along the San Diego waterfront. The new Pier 4 replaces a 52-year old pier and includes new services such as fresh water, electrical, sewage and storm water containment.

"Our primary strategy and mission in San Diego is to support the U.S. Navy and its rebalance to the Pacific," says Erwin Bieber, president of BAE Systems' Platforms & Services sector. "The new pier and dry dock will complement and expand the shipyard's existing capacity in this homeport and provide greater capabilities to our customers. Our continuing investment in the region further demonstrates our commitment to San Diego and recognizes the important role it plays in our strategy."

BAE Systems currently employs approximately 3,000 people in the region, including shipyard workers, weapons support personnel, and employees in nearby Rancho Bernardo supporting U.S. military and intelligence community customers.



Artist's rendering of the new 55,000-ton lifting capacity dry dock

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## MTU PAYS \$1.2 MILLION in settlement with U.S. EPA

**MTU HAS REACHED** a settlement with the U.S. Environmental Protection Agency (EPA) and the Department of Justice in its alleged violation of the Clean Air Act. Under the settlement agreement, MTU America Inc. (MTU), a subsidiary of Rolls-Royce Power Systems AG, will pay a \$1.2 million penalty and perform annual audits of its emission testing and certification activities for three years.

The settlement is part of an ongoing effort by EPA to ensure that all vehicles and engines meet federal emission limits for harmful pollution. The Clean Air Act requires that all vehicles have EPA-issued certificates of conformity prior to being imported or sold in the U.S. to demonstrate that they meet federal emission standards.

The complaint alleges that MTU violated the Clean Air Act by selling 895 non-road, heavy-duty diesel engines, which are used in mining, marine and power generation vehicles and equipment, without valid certificates of conformity.

Through information disclosed by the company, EPA discovered that MTU had obtained EPA certificates of conformity

without conducting valid testing. EPA learned that MTU had installed a catalytic converter onto its prototype engine during testing to reduce emissions of pollutants. MTU had also performed maintenance during durability testing on the same engine, but had not reported this to EPA, a violation of testing regulations. Due to the improper emissions testing by MTU employees, EPA voided the certificates of conformity purporting to cover the engines.

MTU has worked with EPA to take steps to prevent these violations from occurring in the future.

The annual audits will be conducted by an EPA-approved, third-party auditor that will monitor and evaluate compliance with Clean Air Act requirements for testing, certification, record-keeping and reporting. MTU is also required to initiate corrective actions if the audit reveals non-compliance.

Every engine sold in, or imported into, the U.S. must be covered by a valid EPA-issued certificate of conformity. When applying for a certificate of conformity, an applicant must certify to EPA that it followed appropriate testing, certification, record-keeping and reporting requirements to ensure its products will meet applicable federal emission standards to control air pollution.

## CRUISE SHIP PASSENGERS among those killed in Tunisia terrorist attack

**TOURISTS FROM TWO CRUISE LINES** visiting Tunisia for the day, were caught in the middle of a terrorist attack on March 18 at the National Bardo Museum in Tunis, Tunisia. The attack left 21 people dead, including 12 passengers from the MSC Splendida and five passengers from Costa Fascinosa.

Two of the gunmen were killed at the scene and another four suspects have been arrested in the attacks, according to reports. As we were going to press, Tunisian authorities announced that they had killed Lokman Abu Sakhra, the alleged leader of the attack. Sakhra is believed to have been a member of the Okba Ibn Nafaa Brigade, a jihadist group in the region with ties to al-Qaeda.

Following the incident, a number of cruise lines announced that they would not make calls to Tunisia's Port of La Goulette for the time being, including MSC, Costa, Star Clippers, Hapag-Lloyd, Aida Cruises, Princess Cruises, and Holland America.



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## SECOND SEARIVER AFRAMAX TANKER delivered by Aker Philadelphia

**EXXONMOBIL CORPORATION'S** U.S. marine affiliate SeaRiver Maritime, Inc. (SeaRiver) has taken delivery of its second Aframax tanker from Aker Philadelphia Shipyard, Inc (APSI). The 820 ft, 115,000 dwt tanker will transport up to 800,000 barrels of Alaskan North Slope crude oil from Prince William Sound, Alaska to the U.S. West Coast.

The Eagle Bay features double hulls for all cargo and fuel tanks, and is equipped with leading technology for key systems, including main engine components and controls as well as fuel, lube oil and electrical systems to deliver energy efficiencies and better performance.

"Delivery of this vessel marks the conclusion of a successful project that has transformed our company for the better. We are proud of the Eagle Bay and are confident that she will serve the SeaRiver organization well over the decades to come. On behalf of the 1,100 men and women of APSI, I would like to extend our gratitude to SeaRiver for the opportunity to serve their newbuild needs and for what has been a productive partnership," says Steinar Nerbovik, APSI's President and CEO.



SeaRiver's Eagle Bay is one of two crude carriers built at a total cost of \$400 million

Andy Madden, Vice President of Exxon-Mobil Supply & Transportation Company says the contract to build the two tankers, valued at \$400 million, delivered a significant economic boost to the greater Philadelphia region—creating 1,200 plus

jobs in the area and generating millions in revenue.

APSI currently has contracts for two 50,000 dwt product tankers for Philly Tankers LLC and two 3,600 TEU containerships for Matson Navigation, with deliveries in 2018.

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## CARNIVAL CORPORATION & PLC CONTINUES FLEET enhancement program, will add nine new ships

**TWO STRATEGIC** memorandums of agreements have been signed by Carnival Corporation & plc that will see the operator add a total of nine cruise ships to its fleet over a four-year period. The ships will be delivered between 2019 and 2022.

Carnival Corporation & plc has nine cruise ship brands: Carnival Cruise Lines; Costa; P&O Cruise UK; P&O Cruise Australia; Princess Cruises; Holland America Line; AIDA; Cunard Line; and Seabourn; and over 100 vessels in its overall fleet.

The new ships will serve established cruise markets in North America and Europe, as well as the growing market in China.

The two shipyards chosen, Italian shipbuilder Fincantieri S.p.A and German shipbuilder Meyer Werft, will each build new ships based on Carnival Corporation's next-generation ship designs.

"We're excited to take this next step in our fleet enhancement plan with these two new agreements that are consistent with our long-term strategy of measured capacity

growth over time," says Arnold Donald, President and CEO of Carnival Corporation. "Our goal as a company is to exceed the expectations of every guest on every ship every day, and these new ships will further enable us to do just that. These will be the most efficient ships we have ever built and the great guest experience will create even more excitement around cruising—helping new cruisers realize the superior vacation experience and value that cruising offers versus land-based vacations."

Under the agreement, Fincantieri will develop and construct five of the ships at its Monfalcone and Marghera, Italy yards. The announcement, says Fincantieri CEO Giuseppe Bono, "reinforces the extraordinary partnership between us and Carnival Corporation."

Meanwhile, Meyer Werft will build four ships at its shipyards in Papenburg, Germany and Turku, Finland.

Carnival is expected to release additional information on the ship's design, as well as which brands will receive the new ships, at a later date. For now though, the operator goes forth with its fleet enhancement program—adding two new ships to the fleet this year—including P&O Cruises U.K.'s Britannia and AIDA Cruises' AIDAprima.

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## HORIZON LINE'S PAIN IS CROWLEY LINERS SERVICES GAIN in Puerto Rico trade

**LAST NOVEMBER**, Horizon Lines announced that it would terminate its Puerto Rico operations by the end of 2014 due to "continuing losses without the prospect of future profitability." Beyond its substantial losses and negative cash flows in recent years, Horizon said the two vessels it used on the trade had been built in the early 1970s and had become increasingly costly to operate and expensive to maintain.

But Horizon's loss looks to be Crowley's gain. Since mid-December, Crowley Liner Services has, through a number of service enhancements, created additional weekly cargo carrying capacity for about 780 loads.

In addition to increasing weekly cargo carrying capacity, Crowley ordered and has begun placing into service more than 6,500 pieces of new cargo handling equipment, including 40-foot, 45-foot and 48-foot high cube containers, 20-foot ISO tanks and a variety of fixed and slider chassis.

An important milestone in its response to Horizon's exit is the introduction of a new flat-deck barge, 455-4, capable of carrying up to 400 loads. In order to ensure the vessel would accommodate the size and type of equipment most popular in the Puerto Rico trade, Crowley along with its naval architecture and marine engineering firm, Jensen Maritime, reconfigured 455-4, which was originally outfitted for heavy deck cargo transportation, to handle 20 ft, 40 ft, 45 ft and 53 ft containers.

"Before Horizon left the trade, we had, on average, about 230 empty container slots each week on Crowley vessels," explains Jose "Pache" Ayala, Crowley Vice President, Puerto Rico. "That space has been absorbed by customers. In mid-December, we structurally modified our barge layouts to optimize the stow factor, which generated enough new capacity for another 100 loads a week. Then on January 15, we began running our vessels at an accelerated speed, which increased our frequency of service and weekly cargo capacity by another 250 loads. And most recently, we deployed the new flat-deck barge, which will arrive every other week in Puerto Rico—effectively increasing capacity by 200 loads per week."

"We completely understand that there has been some stress on the island's supply chain given the abrupt departure of Horizon Lines from the market," says John Hourihan, Crowley senior vice president and general manager. "We have responded aggressively to replace the void they left, and are confident that current concerns will be short lived and that the island's overall supply chain will

be back to normal very soon."

Crowley has been serving the Puerto Rico market since 1954, longer than any other carrier in the trade. The company, with nearly 200 Puerto Rico employees, is also the number one ocean carrier between the island and the U.S. mainland with more weekly sailings and more cargo carried annually than any other shipping line.

Further showing its commitment to the trade, Crowley is currently building two Jones Act compliant 219.5 m, LNG-fueled, combination container Roll-On/Roll-Off (ConRo) ships to be deployed in the trade in 2017, following their delivery from ship-builder VT Halter Marine, Pascagoula, MS. The keel laying for the first ship, El Coquí, took place this past January.



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## Deadly engine room fire PROMPTS SAFETY ALERT

**A DEADLY FIRE** this past December onboard the Oceania cruise ship *Insignia* that claimed three lives has prompted the U.S. Coast Guard Inspections and Compliance Directorate to issue a Marine Safety Alert (04-15) on Engine Room Operations.

The engine room fire started when a fuel oil spray under pressure developed from an

operating engine's fuel supply line when a bolted flange parted. The fuel spray ignited when it contacted the engine's exhaust piping or turbocharger components. The vessel's fine mist extinguishing system automatically activated and performed as designed extinguishing the primary fire. Fuel pumps and shutoff valves were also secured.

However, the short-duration fire also ignited cable bundles, quickly filling the machinery space with smoke. As a result, one

crewmember and two technicians were unable to egress and perished in the engine room.

Although more details will be available when the investigation is complete, the U.S. Coast Guard issued a safety alert to:

1) Reiterate the importance of vessel engineers being cognizant of and taking action on engine manufacturer technical bulletins and service letters,

2) Remind personnel working in machinery spaces to have a personal exit plan no matter where they are working, and

3) Stress the value of having engineers frequently perform detailed engineering space inspection rounds on engines, systems, and other equipment.

The ongoing investigation into the fire has revealed that a fuel line supply flange integral to the engine parted after three bolts completely loosened and the remaining bolt fractured. Other bolts within the engine's hot box were also found broken. The engine involved in the incident was a Wärtsilä VASA12V32LNE also referenced as a VASA 32. It is a very common engine with thousands operating in ship and shore side service. Over the engine's service life, the manufacturer has produced a number of technical bulletins and service letters related to the fuel system piping, shielding of hot surfaces, other fire protection devices, and availability of components to meet SOLAS requirements. In its service letters Wärtsilä notes that fuel pipes leading to and from the injection pumps are subject to pressure pulses derived from the injection pumps, vibrations caused by normal engine vibrations, and static stresses caused by heat expansion. Owners and operators may obtain engine bulletins and service letters through their Wärtsilä service representative and other OEM/ engine manufacturers.

Emergency egress was also identified as an issue during the fire investigation. Machinery spaces onboard large vessels are complex spaces where an unfamiliar person can become disoriented, particularly during emergencies. Additional factors like the loss of power and lighting or excessive smoke can make rapid evacuation extremely difficult. There are simple steps to improve the odds of a successful escape, says the Coast Guard. Before any work begins, you should learn the locations of available exits and escape routes in all directions. If there are watertight doors present review the procedures to manually open them if they should be closed. Also learn the location of Emergency Escape Breathing Devices (E) and review their proper usage and activation. Lastly, always carry a good flashlight in your pocket. The light it provides may save your life.

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## WSS SAFETY SERVICE helps ship operators with firefighting equipment

**FOR CRUISE SHIP OPERATORS,** keeping up with regulatory demands for lifesaving appliances, fire protection and firefighting equipment and systems onboard their ships can be a major headache. Regulations demand that fire, rescue and safety equipment must be inspected according to strict schedules and due dates must always be met. Non-compliance is serious and costly, perhaps holding a ship in port, risking fines, or worst of all, possible injuries or death. But what if you could take complexity out of compliance?

Wilhelmsen Ships Service (WSS), Lysaker, Norway, believes its WSS Safety Service 360 provides an excellent solution. Jennifer Menard, WSS Technical Services Director Americas, says WSS's Safety Service 360 Fleet Agreement offers consistency both in the provision and standard of work. "As a supplier of fire safety equipment and servicing for our own Unitor brand in addition to others," says Menard, "we have been active in setting standards that enable shipowners and operators to minimize their risks."

She says that WSS is the only supplier that can offer a global service certified by all IACS members backed up by five regional training centers for WSS technicians.

According to Menard, operators that sign up to the WSS Safety Service 360 Agreement pay an annual fee then WSS handles the servicing of the equipment, both its own brands and those of other OEMs.

The key advantage of the WSS Safety Service Agreement, she says, is that it provides a consolidated, standardized program to the shipowner. "On top of the operational advantages, working this way also gives our clients much lower administration and running costs from a management perspective compared to an ad hoc approach," she adds.

Menard explains that typically WSS will gather all the required information on service dates then enter them into its management system. This allows WSS to flag up to the customers when a particular piece of equipment needs to be inspected and make arrangements to complete the work.

"Our safety service centers work closely with the OEMs whose equipment we are asked to maintain and when new systems or solutions are released, we invite OEMs to train us on the changes," she says.

Menard says that owners choosing the WSS Safety Service Agreement run ships that are not just safer, but actually more cost-efficient as a result. She says that WSS can

deliver standardized, high quality products and services, which provides the potential to reduce operational and administration costs for customers.

With no need for local sourcing, points out Menard, purchasing is consolidated, reducing freight costs. Working with WSS also means having a trusted business relationship; we work to strong corporate governance and business values.

WSS has a long history of working with

cruise operators in the world's largest cruise locations including Miami, Barcelona, Shanghai, Rio de Janeiro, New York, Yokohama and Sydney.

At each of these locations, WSS safety service technicians carry out services on a wide range of safety, firefighting and rescue equipment including CO<sub>2</sub> high-pressure systems, portable fire extinguishers, hydrants and fire hoses, inflatable life jackets, smoke sampling systems and portable gas detectors.

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## Is it time to remove the ban on U.S. crude oil exports?

**WITH U.S. CRUDE OIL** production at more than 11 million barrels per day—levels not seen in 45 years—and continuing to rise and oil reserves close to record levels, the Senate's Committee on Energy and Natural Resources held a hearing on March 19 to discuss U.S. Crude Oil Export Policy. The ban on crude exports has been in place since the 1970s when U.S. consumers had to suffer through long gas lines during the oil crisis.

Among those testifying before the committee last month in support of lifting the ban on crude oil exports was Ryan Lance, Chairman and Chief Executive Officer, ConocoPhillips.

Lance testified that the current U.S. energy picture "calls for a clear and urgent need to remove the ban on crude oil exports. It is time to let American oil trade freely on the global market, just as other U.S. energy commodities are traded in the global economy."

During his testimony, Lance outlined 12 points why the crude oil export ban should be repealed.

**A new era of U.S. energy abundance** – A decade ago domestic natural gas was above \$10 per thousand standard cubic feet, now it's less than \$3 per thousand standard cubic feet.

**Exports would help consumers save at the gasoline pump** – Exporting American crude oil would increase global oil supply and lower gasoline prices. An IHS study, for example, shows that lower fuel prices would result in \$265 billion in U.S. consumer savings annually between 2016 and 2030.

**Job creator** – Repealing the ban would create 394,000 to 859,000 additional jobs annually between 2016 and 2030.

**Crude oil exports would grow the U.S. economy** – Export sales of crude oil would stimulate demand for domestic production, and grow the U.S. GDP. Studies indicate an increase on average by \$86 billion to \$170 billion annually between 2016 and 2030 and government revenue could increase by \$1.3 trillion annually.

**Crude oil exports would find a ready market among worldwide purchasers** – U.S. allies overseas would be able to diversify their energy supplies.

**Advanced technology and innovation** – U.S. companies have developed hydraulic fracturing and horizontal drilling which are now in use worldwide.

**Many U.S. refineries are not equipped to handle the light oil** – U.S. refineries are geared to refine imported heavier oil.

**Rising U.S. crude oil production exceeds our refining capacity** – The rapid growth of U.S. crude oil production has overwhelmed the current refining capacity.

**American crude oil sells for less than global crude oil** – The ban, combined with domestic refinery limitations, results in American oil selling for less than global oil.

**Removing the crude oil export ban would resolve the refining bottleneck.**

**Look to the Alaskan North Slope (ANS) oil** – The ANS was exempted from the export ban in 1996, allowing exports to Asia. The Government Accountability Office found no resulting increases in gasoline prices for West Coast consumers.

**The ban could be re-implemented** – The federal government can reverse policy at any time.

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U.S. Coast Guard photo shows the drill barge Kulluk, which was used by Shell in the Beaufort Sea in 2012. The Kulluk was scrapped in China last year

# REGULATING EXPLORATION in the Arctic

By Darrell L. Conner, Louisiana W. Cutler, David L. Wochner, Andrew J. Newhart, and Michael L. O'Neill, K&L Gates, LLP

## U.S. Federal Regulators Propose Rules for Oil and Gas Exploratory Drilling on the Arctic Outer Continental Shelf

In recent years, the energy industry has expressed significant interest in investigating submerged lands on the U.S. Outer Continental Shelf (OCS) in the Arctic for commercial quantities of oil and natural gas. The challenging operational environment, distance from offshore infrastructure, and underdeveloped regulatory context have limited exploration and production (E&P) activities on the Arctic OCS to date. To further standardize regulatory requirements for operations on the Arctic OCS offshore Alaska, the U.S. Department of Interior's Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE) released a proposed rulemaking on February 20, 2015, entitled, "Oil and Gas and Sulphur Operations on the Outer Continental Shelf - Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf."

Describing the challenges facing Arctic OCS exploration and production as "severe," and citing different environmental considerations and the relatively remote geographic location of the Arctic OCS, BOEM and BSEE propose several administrative and operational requirements that will be more stringent than those required for other OCS locations and will increase costs for E&P operations. In particular, the Proposed Rulemaking would require E&P operators to have a spare relief rig and other equipment available

to respond to any well control incidents. Although the Proposed Rulemaking contemplates the likelihood that operators would pool their resources to make this equipment available to the operators' fleet on the Arctic OCS, this requirement could add substantial additional costs to E&P operations and discourage significant E&P efforts in the current low-price oil and gas market.

However, BOEM and BSEE will accept comments from the public until April 27, 2015, so industry and other interested stakeholders will have an opportunity to work with BOEM and BSEE to shape the final rulemaking.

### Background

The Outer Continental Shelf Lands Act (OCSLA) was enacted in 1953, and significantly amended in 1978. Congress established a National policy of making the OCS "available for expeditious and orderly development, subject to environmental safeguards in a manner which is consistent with the maintenance of competition and other national needs." Congress also emphasized that the development of the OCS needs to be done, "by well trained personnel using technology, precautions and techniques to prevent or minimize the likelihood of blowouts, loss of well control, fires, spillages, physical obstruction to other users of the waters, or other

occurrences which may cause damage to the environment or to property, or endanger life or health.”

Under the OCSLA, the Secretary of the Interior is responsible for the administration of mineral exploration and development of the OCS. OCSLA, as amended, offers guidelines for implementing the OCS oil and gas exploration and development program. The Secretary has delegated most of the administrative and regulatory duties for the OCS oil and gas program to BOEM and BSEE. BOEM reviews individual Exploration Plans and the BSEE reviews the Application for Permit to Drill to determine whether the operator's proposed activities meet the OCSLA standards that govern offshore exploration and development.

The Department of Interior (DOI) stated that it consulted with multiple stakeholders during the formation of this proposed rule including Alaska Natives, various environmental organizations and individual oil and gas companies, and considered Shell's recent experience with exploratory drilling in the Chukchi Sea. The Administration believes the Proposed Rulemaking will help achieve the goals of protecting the unique Arctic ecosystem, respecting the needs and culture of the Alaska Natives, and reducing the country's reliance on foreign oil.

### The Proposed Rulemaking

Against this backdrop, and with specific recognition of the significant economically recoverable reserves on the Arctic OCS, BOEM and BSEE released the Proposed Regulations on February 20, 2015. These proposals include adjustments to existing regulations as well as entirely new regulatory provisions. As noted above, the Proposed Rulemaking contains additional operational and administrative requirements, many of which likely will impose significant costs

on operators. The Proposed Rulemaking would apply to exploration operations on the Arctic OCS only, defined as the Beaufort Sea and Chukchi Sea Planning Areas, and aim to address the short operational season (Summer through early Fall), geographical remoteness, and environmental conditions like sea ice encroachment unique to the Arctic OCS. The proposed regulations will not apply to actual Development drilling activities. The agency makes clear in the proposed rule that it will address the appropriate regulations for commercial development of oil and gas resources on the Arctic OCS after it has gained experience from the exploration activities that are the subject of this rulemaking.

### Operational Requirements

As noted above, the key provisions in the Proposed Rulemaking, and the major driver of anticipated costs from this regulatory program, is the requirement that operators have a “relief rig” and other back-up equipment available on stand-by notice to assist in case of a loss of well control. Citing the response to the Gulf of Mexico Macondo oil spill of 2010, when the spill was ultimately stopped by the drilling of a relief well by another drilling rig, the Proposed Rulemaking would require operators to have a back-up or “relief rig” available to deploy in case of a similar loss of well control on the Arctic OCS. The Proposed Rulemaking would require operators to have a relief rig available to drill and complete a relief well within 45 days of a loss of well-control at an exploratory well site on the Arctic OCS.

In addition to the relief rig, the Proposed Rulemaking would also require operators to have Source Control and Containment Equipment (SCCE) available for rapid deployment in case of a loss of well control. The SCCE required would include a capping stack, a cap



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and flow system, and a containment dome and is not currently required in other parts of the U.S. OCS. The capping stack technology advanced significantly in the aftermath of Macondo; many in the oil and gas industry believe that this should be adequate to address a loss-of-control event and that a separate requirement for a relief rig is unnecessary. DOI asserts that such a redundancy is necessary in light of the remote nature of the exploration activities and the lack of proximate infrastructure.

The proposed rule also allows operators to request approval from the agency of alternative compliance measures as well, and specifically requests comments on such possible alternative technologies.

The proposed rule also imposes a requirement on operators to more frequently conduct pressure testing of the blowout preventer (BOP) system associated with the exploration activities. In particular, recognizing the concerns that industry has raised related to the efficacy of increasing the frequency of BOP testing, the agency concludes that given the challenging Arctic environment and the uncertainty of how the BOP equipment will perform in the Arctic conditions, it is prudent to require a BOP pressure test every 7 days, instead of the standard 14 days.

Finally, the Proposed Rulemaking includes a number of provisions to minimize environmental impacts of exploratory drilling activities, such as increased oil spill response testing, a requirement to capture all petroleum-based mud and associated cuttings from the drilling operations, and requirements to limit impacts on subsistence hunting activities.

### Administrative Changes

In addition to the Exploration Plan and the Application for Permit to Drill familiar to operators in other parts of the U.S. OCS, the

Proposed Rulemaking would require an additional planning document, an Integrated Operations Plan (IOP), for E&P activities on the Arctic OCS. This document would require preliminary details for the proposed exploratory drilling program and would need to be filed with BOEM at least 90 days before submission of the Exploration Plan. The Proposed Rulemaking contains other relatively minor changes to administrative requirements as well, including shorter reporting timelines for certain drilling incidents. Operators contemplating engaging in E&P operations on the Arctic OCS are encouraged to review these requirements carefully.

### Implications

Recognizing not only the unique environmental conditions anticipated on the Arctic OCS but also the relative geographic remoteness of the Arctic OCS from traditional centers of offshore E&P infrastructure, the Proposed Rulemaking would require operators to have resources available for addressing potential environmental incidents that are similar to the resources available in more conventional production areas of the U.S. OCS. These requirements will demand operators to build up emergency response capacity and resources quickly, as opposed to a gradual increase in capacity seen in the Gulf of Mexico.

The requirements for relief rigs, as well as SCCE and oil spill response capabilities, likely will add significant costs to E&P operations. BOEM and BSEE recognize the efficacy of cooperative solutions, such as mutual aid agreements, to meet SCCE and relief rig capabilities of the Proposed Rulemaking. Developing these agreements and other cooperative programs will be critical to manage costs of compliance with the regulations in the Proposed Rulemaking. ■

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## Short-term gloom clouds positive outlook for offshore vessel operators

By Paul Bartlett, Contributing Editor

Oversupply of oil drilling rigs in producing regions leads to stacking and reduced demand for offshore service vessels

**E**ven before the price of oil crashed, energy pundits had warned that most of the world's "easy" offshore oil and gas had already been exploited. Tomorrow's seabed reserves, they said, would lie in deeper, more hostile and remote regions where breakeven costs would be significantly higher.

So, when the Saudis won the day at OPEC's November meeting in Vienna, and U.S. energy imports continued to fall thanks to shale energy, rising domestic production, and lower gasoline consumption, the writing was on the wall for energy firms. Rating agencies downgraded major energy companies and placed others on credit watch. And sharp CAPEX cuts would soon filter through to the offshore sector's service providers.

Analysts have now warned that the supply of drill rigs will exceed demand in many producing regions, leading to rig-stacking and reduced demand for offshore vessels of various types. Baker Hughes' worldwide rig count for February was 2,986, down 323 from the 3,309 counted in January, and 750 less than the 3,736 tally in February 2014. Transocean has plans to scrap a total of 18 floaters, including the GSF Aleutian Key and the Sedco 707. It will take a

charge of \$90 million to \$110 million in the first quarter as a result of the scrapping of the GSF Aleutian and Sedco 707.

Short-term overcapacity in the Offshore Service Vessel (OSV) sector is inevitable, sources believe. They point out that there are around 1,000 units on order which will swell the OSV fleet to about 4,500. And the deliveries will come at just the wrong time.

Despite the doom and gloom, however, there are two sides to every story. As on the rig side, if serious oversupply develops, it is likely to stimulate increased scrapping of older vessels, particularly smaller units with relatively poor specs, leading to fleet modernization and upgrade. More sector consolidation is also likely, concentrating OSV business in the hands of a smaller number of larger operators.

Of course, cheap oil means more affordable bunkers and luboils.

### Medium-term cheer

In the short run, there may be no escaping the fact that OSV operators face a torrid time. But for some, particularly those at the high end of the market, there are positive signs beyond.

Energy analysts agree that hydrocarbons will continue to meet



most of mankind's energy requirements for decades to come. New smaller reserves in more difficult places will have to be found, developed, and exploited. And energy firms are therefore now looking for larger vessels with more deck space and higher specs.

From seismic surveys to complex subsea construction; from light well intervention to ultra-deepwater production, tomorrow's offshore technology will be more complex than ever. Increasingly sophisticated vessels are already being designed and built, often by Norwegians.

New techniques in enhanced oil recovery are transforming the yields of existing offshore reservoirs, extending the lives of many so-called mature fields. Nowhere is this more evident than in the North Sea, and once again it is the Norwegians who are pioneering developments. Such initiatives don't look that great at \$50 oil, but the picture changes dramatically at \$70 and above.

Seismic survey firms would appear right in the firing line as capex cuts run deep. But Norway's Dolphin Geophysical, listed in Oslo, seems relatively upbeat. Preliminary 2014 figures show revenues up 56% on 2013 numbers, to \$440.2 million; an EBITDA of \$124.8 million compared with \$76m a year earlier; and profit up 57% to \$34.7 million.

The company's current fleet expansion program, which saw the commissioning of two high-capacity 3D vessels in 2014 including the Sanko Sword and the 3D Polar Empress due to join the fleet in April, means Dolphin is now the world's number two in high-end 3D vessels towing 14-plus streamers. As of February 1, the company had forward contract cover of \$285 million for 2015, almost a third of which relates to its "Powerful Solutions" offering, involving vessels with 12 or more streamers.

Meanwhile, high-end light well intervention vessels offer a far more competitive option to rigs when subsea wells need attention to maintain flow rates. Once again, Norwegian firms are spearheading the development of such vessels, often for deployment in the North Sea. But enhanced oil recovery is also a focus in other producing regions including those with "easy oil" reserves such as the Middle East.

### Short-term challenges

In the short run, though, there is no escaping the challenges ahead. Norway's privately owned Island Offshore has 28 vessels in operation including platform supply ships, anchor handling tug supply ships, well stimulation, subsea construction and light well intervention units. Despite a 2014 profit before tax of Nkr 406 million (\$49 million), 2015 contract cover of about 80% and a Nkr 6.4 billion (\$770 million) order backlog, equivalent to almost two-and-a-half times 2014 revenue, Island Offshore is bracing for a tough market this year and next.

Managing Director Håvard Ulstein has said that reduced activity this year and next could worsen market conditions further unless ship owners take responsibility and reduce vessel supply. The company has delayed delivery of six Platform Supply Vessels (PSVs) currently under construction at Norway's Vard Brevik shipyard for an average of six months and is laying up two of its PSVs, Island Duke and Island Duchess, for an indefinite period. It blames a worsening of market conditions following oil companies' reduced activity, particularly in the North Sea.

At the recent Scotia Howard Weil 43rd Annual Energy Conference in New Orleans, LA, Joe Bennett, Tidewater Executive Vice President and Chief Investors Relations Officer, said the keys in a challenged market are to have safe, efficient and compliant operations, new vessels that service all water depths, geographic diversity with a strong customer base, reasonable CAPEX expectations, and a solid balance sheet and financial flexibility.

Geographic diversity is certainly something Tidewater has; its fleet operates worldwide, with 27 percent in the Americas, 45 percent in Africa and Europe, 18 percent in the Middle East, and the remaining 10 percent in Asia Pacific. The company has invested heavily in upgrading its fleet, spending \$5.181 billion on adding 278 deepwater PSVs, anchor handling tug supply vessels, towing supply and supply vessels, and other vessels since January 2000. Tidewater's active fleet as of December 31, 2014 was 242 new vessels, averaging 6.6 years of age, and 18 traditional vessels with an average age of 25.8 years.

Bennett estimated that there are 3,267 OSVs in the world fleet, of which about 700 are 25+ years old—about 22 percent of the fleet. As of March 2015, there are 437 AHTS and PSVs under construction.

Meanwhile, one of the top operators of next generation OSVs worldwide, Hornbeck Offshore Services, Inc. (HOS) has struck a deal to sell potentially four of its 250EDF class OSVs to the U.S. Navy. The four OSVs, which are currently chartered to the U.S. Navy, will be operated for the Navy under an operations and maintenance contract for up to 10-years. The contract to purchase three of the OSVs is \$114 million and could potentially reach \$152 million, if the Navy exercises the option for the fourth vessel.

HOS is the number one operator in the Gulf of Mexico, with Pro Forma 300 Class fleet by deadweight tonnage, with 33 percent of the overall dwt of the 76 vessels in operation or under construction, followed by Edison Chouest at 32 percent, Harvey Gulf at 17 percent, Otto Candies at 8 percent, Tidewater at 5 percent, Aries Marine, at 3 percent, and GulfMark at 2 percent. ■



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The Compact Semi-Submersible is a flexible platform. Here, the CSS Olympia is outfitted as an accommodation vessel



## Compact Semi-Submersibles: A New Wave in the Offshore Market

By: Dave McMillan, President, Vard Marine Inc.

**T**he Compact Semi-Submersible (CSS) concept began life in 2005, and now 10 years later, it's incredible to see the first units finally delivered. The seed for the CSS was first planted at the Offshore Technology Conference in Houston, where the General Manager of Doha Marine Services (Qatar), Robin Reeves, approached Vard Marine to discuss how costly weather downtime could be reduced. On the back of a scrap piece of paper an idea was sketched of a new vessel concept that would be stable in rough weather, could maintain position without anchors, and would be economical to build, own and operate. A vessel that would change the face of offshore operations.

The CSS design developed by Vard Marine in cooperation with MAC offshore and the other CSS Design partners integrates the motion benefits of a semi-submersible into a compact mobile platform to ensure low day charter rates and an industry leading design in terms of operability, time on station, and operational flexibility.

With the objective of creating a platform with superior deadweight, deck cargo area and capacities to comparable designs, DP-3 capability with a flexible mission fit, the Vard engineering team and its partners produced a vessel of 84 meters in length with a single full length strut per side that is more capable, more configurable, and much more cost-effective than its closest competitors.

The wide deck spanning the twin hulls permits versatile use of deck space and a wide variety of options for unit configuration. The CSS provides an open, stable platform for many applications, allowing owners to quickly re-configure at little cost based on different charter requirements.

The structural configuration of the unit is optimized for producibility, making the CSS both rapid and easy to build, as well as easy to refit and maintain.

### **An evolutionary leap for on-station offshore support units**

From the outset, achieving the right balance between deadweight capacity and sea-keeping was a key factor in selecting the principal dimensions of the CSS and in particular the size of the lower pontoon and the length/width of the struts. Extensive resistance and sea-keeping model tests were conducted to assess hull resistance; structural loads, unit operability, ship motion characteristics, and slamming loads. The resulting platform offers the ability to undertake a wide variety of construction, well intervention, dive support, and accommodation roles, all with unrestricted worldwide operations.

The CSS has substantially reduced roll motions and only a slight increase in pitch and heave motions when compared to a monohull design with equivalent capabilities. The accommodation unit can remain connected to a rig by gangway 99% of the time, suggesting that only the most extreme weather events will require the CSS to detach from the rig. The DP-3 capability of the CSS can still remain connected 89% of the time. The CSS can therefore maintain service and continue to meet charter under nearly all foreseeable conditions, while remaining efficient and cost effective.

One of the greatest challenges in the CSS project was to design a hull structure that could withstand the prying loads from the multi-hull configuration and also have an adequate fatigue

life based on un-restricted worldwide operations. A comprehensive scope of Computational Fluid Dynamics (CFD) analysis in combination with the model test load data and other analytical ship motion methods provided the excellent basis on which the structure was developed. Fundamentally, the structural was designed to be relatively simple with large flat panels and large radius corners to limit high stress concentration areas

while maintaining an acceptable steel weight. The critical area that received the greatest attention was the upper haunch which connected the inner face of the vertical strut to the underside of the main transverse wet deck/hull structure. This location generated the highest structural loads and also required the greatest attention to structural details to ensure the fatigue requirements were met. The use of local insert plates in the shell and

optimized framing helped alleviate stress concentrations and extend the fatigue life of the particular structural details.

Specific analysis was performed to ascertain the wave impact loads on the underside of the wet deck as this is a complex scenario with limited previous experimental or analytical data available on which to compare results. The design has now received full ABS approval with unrestricted service notation based on draft and wave height limitations.

The majority of the machinery and systems on the CSS designs are common to most diesel-electrical vessels and have been configured to suit the DP-3 designation. Six diesel generators provide power for the hotel and main deck equipment loads as well as four azimuth thrusters. The azimuthing thrusters are capable of being removed without a dry dock by soft patch above the pontoons while trimming/heeling the vessel. New CSS designs are also exploring electric podded thrusters that will be underwater demountable while at sea. The power and propulsion plant is designed to compensate for a failure, fire, or flood in any one machinery space and if a complete engine room space is rendered inoperable, the power plant is still capable of providing DP capabilities but at a reduced capacity.

Machinery cooling on the vessel variants has been accomplished using a number of different cooling systems. Throughout the variants there are also different levels of firefighting capability on board.

Most of the CSS designs have large capacity cranes that require the ship to be ballasted to its wet deck to maximize the stability for heavy lifts. Thus, the vessel is fitted with large ballast tanks and a comprehensive ballast system to move great volumes of water quickly. The vessels were designed to be operable throughout the world and have been fitted with various ballast treatment options to suit the mission and client preferences.

Safety on the vessel is paramount with H<sub>2</sub>S sensing ventilation systems that will automatically shut down the ventilation to prevent the spread of the poisonous gas. Most of the variants are also fitted with large hospitals with an operating room and multiple wards. Lifesaving equipment onboard is industry leading with 100% life-saving capacity; the vessels are using the largest enclosed lifeboats in the world.

## Variants

The CSS concept has drawn widespread and increasing interest from industry


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leading to orders of four different variants. The variants currently under construction include a light well-intervention unit, two accommodation units, and a flexible light well-intervention/construction unit with four-point mooring ("fit for purpose").

The primary use of the first CSS delivered, the CSS Olympia, is to operate as a floating accommodation unit for rig personnel. The CSS Olympia is fully outfitted with all accommodations, with hotel and entertainment services to provide a comfortable and functional environment for the rig workers during their rest time. The vessel is intended to remain connected to the rig via a telescopic gangway system and is capable of accommodating up to 431 people. Other features include a 12.8 tonne rated helideck, DP-3 rating and a 150MT telescopic boom crane. A further two vessels of this design will be delivered by the end of the second quarter of this year.

The second CSS, the CSS Derwent with Hallin Marine, is a Light Well Intervention Vessel and due for delivery later this summer. The CSS Derwent will support well intervention, well stimulation and subsea installations that are performed using the same hullform concept as the accommodation variant. Some of the key features of the vessel include a MacGregor 200MT module handling system; 150MT knuckle boom crane; two ROV launch and recovery systems, DP-3 rating and accommodation for 152 people.

### Fit for purpose

The Fit for Purpose CSS is a multi-functional well-intervention, supply and light construction vessel. The primary features of the vessel are a 150 MT lattice boom crane, a telescopic heave compensated gangway, a moonpool, a 12.8 T rated helideck, DP-2 rating and accommodation for 199 people. The vessel is equipped to operate as a thruster assisted four-point moored vessel significantly reducing refuelling requirements. The first of the FFP designs was delivered late in 2014 and is successfully operating under a charter to Shell in Brunei.

### Maintainer

The CSS Maintainer Vessel's primary function is to act as a floating maintenance support unit for offshore platforms. The Maintainer will remain connected to the rig via a telescopic gangway system and is capable of accommodating up to 350 people. Other features include a 12.8 tonne rated helideck, DP-3 rating and a 60T knuckle boom crane. Further

variants of this platform include a set up and tank configuration for well stimulation equipment, a moonpool, and subsea ROV LARS capabilities.

### Next Generation CSS

The Next Generation CSS is a concept that grew from industry demand for a highly versatile platform based on the current STX CSS hullform with increased accommodation and cargo carrying capacities.

Designed around the most current ABS and IMO regulations, the result is a DP3 capable platform that can accommodate 300 in fully ILO MLC 2006 compliant single cabins. The multi-functioning platform, featuring a 2,000 m<sup>2</sup> clear working deck space, a 9m x 8m moonpool and a versatile and customizable crane configuration, is capable of supporting construction, maintenance, rig support, well intervention and other offshore operations. ■



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The ISM Code requires the development, implementation and maintenance of an SMS

# ISM, A CLOSER LOOK

Alleged deficiencies during a PSC inspection can be tied back to ship's Safety Management System

By Captain Matthew Bonvento, Senior Manager, Safety, Security, Quality and Regulatory Compliance, Vanuatu Maritime Services Ltd.

International Safety Management has become both a blessing and a curse for owners, managers and crew. International Safety Management (ISM) has increasingly been used by Port State Control as a tool for correcting vessel deficiencies and even for detaining sub-standard vessels. A look into how Port State Control (PSC) views and uses the Safety Management System of a vessel will assist owners, operators, Flag States and Recognized Organizations in ensuring the safety of seafarers and the ships that they sail.

The relevance of the ISM was first realized by IMO on November 19, 1987 in Resolution A.596(15), which was a direct response to the "tragic loss of the United Kingdom registered passenger RO/RO ferry Herald of Free Enterprise which capsized off the port of Zeebrugge on March 6, 1987 with a loss of 193 lives." The Code was actually born on November 15, 1979 in IMO Resolution A.443(XI) "Decisions of the shipmaster with regard to Maritime Safety and Marine Environmental Protection."

So what exactly is ISM? As described in the Preamble to the International Safety Management Code, "The purpose of this Code is to provide an international standard for the safe management and operation of ships and for pollution prevention."

The Code has several requirements, namely that every company should develop, implement and maintain a Safety Management System that includes these functional requirements:

1. A safety and environmental protection policy;
2. Instructions and procedures to ensure safe operation of ships and protection of the environment in compliance with relevant international and flag state legislation;
3. Defined levels of authority and lines of communication between, and among shore and shipboard personnel;
4. Procedures for reporting accidents and non-conformities with the provisions of this Code;
5. Procedures to prepare for and respond to emergency situations; and
6. Procedures for internal audits and management reviews.

But the Code delves much deeper than that. The Safety Management System (or SMS for short) is a living document. The SMS is meant to evolve with changes in the industry, account for actual shipboard operations and contingencies, while taking into account the needs of the crew. An SMS can be maintained and adjusted on board, with proper shore side support. The ClassNK

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**Fire Safety was one of the top deficiencies in the Tokyo MOU in 2013**

Port State Control Annual Report for 2013 lists: Failure in implementation of the SMS, Inadequate Implementation of SMS by crew, Inadequate maintenance of Ship's Equipment, Chart Management not followed SMS, and Ship's crew not familiar with operation of ship's equipment, as all valid ISM deficiencies noted by PSC during this year. This leaves a lot of room for interpretation.

If one were to review the Port State Control Annual Reports from Various MOU's, such as Tokyo, Paris, Black Sea, and Abuja, one would find that ISM deficiencies during PSC inspections range from 2.57 percent to 5 percent. These deficiencies are directly related to improper documentation of procedures and neglect in following company procedures. If you were to look at ISM in a broader view, it is readily apparent that many of the other categories listed as

an alleged deficiency during a PSC inspection can be tied back to the vessel's SMS. For example, Fire Safety is listed at 18 percent of the total number of deficiencies in the Tokyo MOU for 2013. A recent inspection in the Tokyo MOU region showed that a vessel did not have a sufficient amount of foam on board for firefighting. An example from the Paris MOU region stated that the lack of a working language as a direct ISM deficiency. Other items on board tied to the ISM is a lack of Garbage Record Book Entries, improper Chart Corrections and a manning issue—all were listed as ISM deficiencies even though they can be tied to MARPOL, SOLAS and STCW, respectively. In these reports a PSC officer states "Deficiencies marked ISM are objective evidence of a failure, or lack of effectiveness of the implementation of the ISM code. Internal Safety Audit and corrective action is required within 3 months."

The Paris MOU website states: "What kind of deficiencies would be categorized



**"By using ...basic requirements for an SMS to list and identify the non-conformities (or alleged deficiencies in the eyes of PSC), issues can be corrected and even prevented before they develop into hazards to the safety of the vessel and the crew."**

as a 'Non-ISM deficiency'? A non-ISM deficiency is any deficiency not directly related to the provisions of the ISM Code. Such deficiencies could be related, but are not limited to: technical, operational or environmental requirements; certification and documentation; or working and living conditions on board. The convention reference for such deficiency does not refer to the ISM Code."

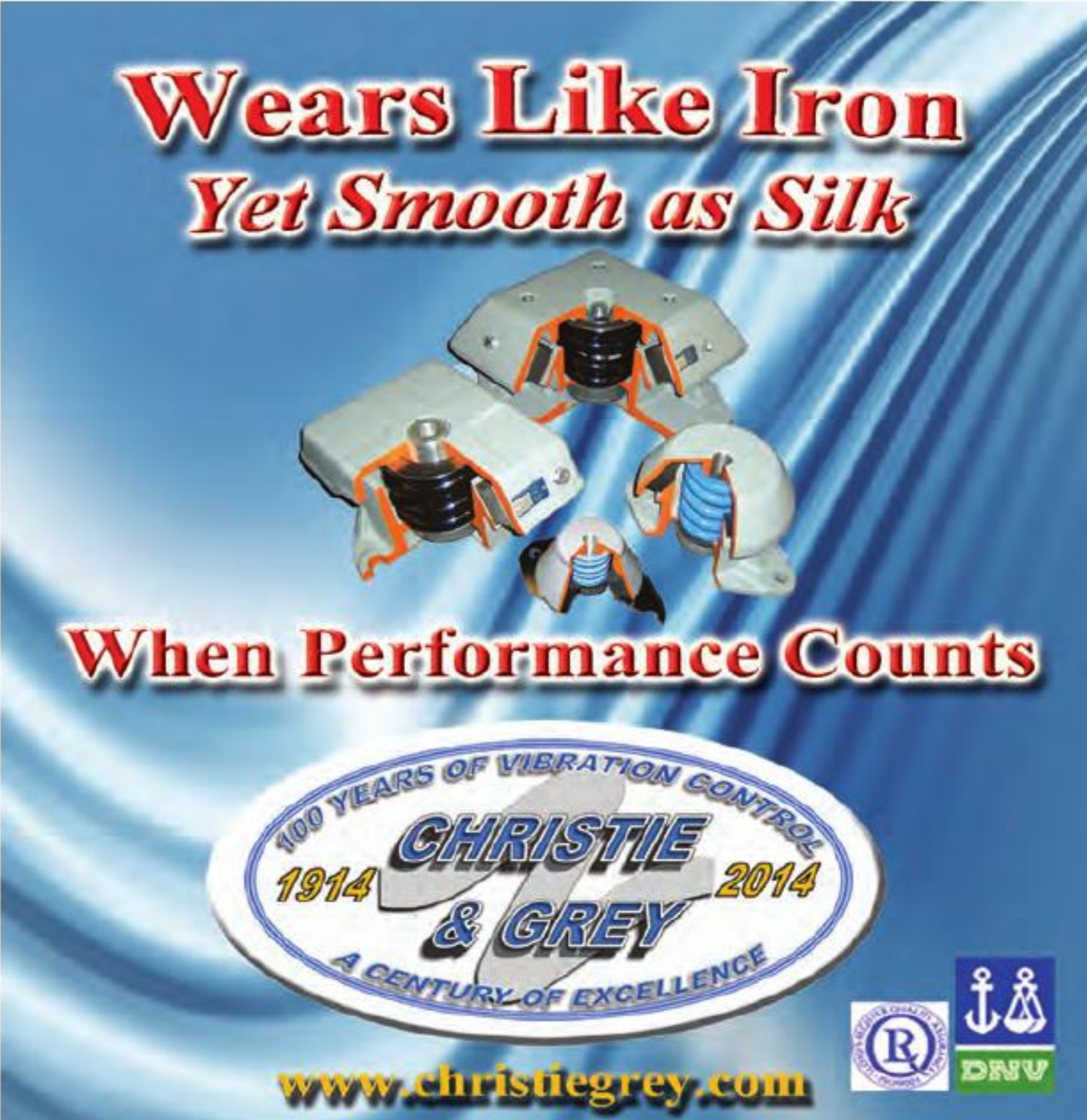
The reader also should be aware of what is stated in IMO Resolution A.1052(27): Procedures for Port State Control. In Appendix 8 "A more detailed inspection of the Safety Management System (SMS) should be carried out if clear grounds are established. Clear grounds may include absent or inaccurate ISM Code certification or detainable (or many non-detainable) deficiencies in other areas." PSCOs are to "use professional judgment in carrying out all duties and consider consulting others as deemed appropriate."

The lingering question is: How can Owners/Managers/Operators use the ISM code to keep deficiencies and detentions to a minimum?

By using just the above basic requirements for an SMS to list and identify the non-conformities (or alleged deficiencies in the eyes of PSC), issues can be corrected and even prevented before they develop into hazards to the safety of the vessel and crew. For example, the previous mention of a vessel inspection in the Tokyo MOU where the vessel did not have the required amount of foam for firefighting on board could have easily been prevented had the vessel safety policy included inventory control of all firefighting and lifesaving equipment.

Vessel owners, operators, Masters and crew all benefit by the proper implementation of the SMS. A well written, adaptable and understandable SMS can lead to fewer accidents and to standardization within a company fleet. Using the SMS to its fullest potential with other available tools such as Flag State Pre-Screening Services can drastically reduce the problems encountered during PSC Inspections and ensure a safe working environment. ■

*Author Capt. Matthew Bonvento is responsible for the enforcement of IMO and Vanuatu Regulations for the international ship registry for the Republic of Vanuatu. Matt graduated from SUNY Maritime in 2001 with a B.S. in Marine Transportation and then again in 2004 with an M.S. in International Transportation Management. Matt sailed for over 10 years.*



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The EcoLiner reduces fuel costs by up to 25% when compared to conventional inland tankers

# FIRST ADOPTERS

Compiled By Marine Log Staff

## Europe moves ahead with LNG-fueled vessels on inland and coastal waterways

**B**ack in 2014, the European Union initiated a transportation infrastructure policy with the goal of connecting Europe through efficient transportation links, and creating a seamless transportation of passengers, freight and commerce using some of the latest technology. Through the Trans European Transport Network (TEN-T) program, that effort has a whopping budget of EUR26 billion up to the year 2020.

At the European Shipping Week in Brussels last month, EU Commissioner for Transport Violeta Bluc said, “Maritime transport and short sea shipping can make our overall transport system more sustainable. They are the cleanest modes of transport for large quantities of cargo. Some journeys in Europe are actually much shorter by sea than by land. But we must also recognize the total emissions from shipping and the rate at which your industry is predicted to grow.

“The Commission will continue to support you in coping with the growing demand for reducing the environmental impact of shipping. We have demonstrated through the European Sustainable Shipping Forum how keen we are to cooperate with you to promote innovative and competitive solutions.”

A good example of an “innovative and competitive solution” was launched early in February by the Damen Shipyards Group at its shipyard in Romania. The first LNG-powered Damen EcoLiner

inland shipping tanker was developed by Damen to reduce fuel consumption and cut emissions using conventional, proven engineering with sustainable innovations, including an ACES Air-Lubricated Hull, a gas-electrical shaft propulsion system and one of the first Van der Velden FLEX Tunnel installations. Damen says the EcoLiner reduces fuel costs by up to 25% as compared with similar conventional inland tankers.

The European Union co-financed the project from the TEN-T Program with more than EUR1.1 million as part of the project “LNG Masterplan for Rhine-Main-Danube.”

The LNG Masterplan for Rhine-Main-Danube is one of the biggest innovation projects financed through the TEN-T program. It aims to promote LNG as a marine fuel and the movement of cargo on the inland waterways. What it also does is that it also formulates and enforces the necessary (safety) regulations for the use and transport of LNG. The LNG Masterplan benefits from over EUR40 million of EU support and is implemented by a consortium of 33 companies and organizations from the public and private sectors across 12 European Member States. The project is coordinated by Pro Danube Management GmbH and the Rotterdam Port Authority.

Damen recently completed comprehensive tank testing of the EcoLiner design at research institute MARIN. Simon Provoost, Product Director Inland Waterway Transport at Damen Shipyards,

says the testing of the design in combination with its multiple innovations was important to Damen so that it could offer the 3,040 m<sup>3</sup> capacity EcoLiner to the market with utmost confidence.

"After successfully testing at MARIN, we can now complete the build in the Netherlands and we're talking with a number of interested parties," says Provoost. "Fuel accounts for a very large proportion of inland shipping costs, so if operators can save 20% or more, that generates a lot of interest."

"Every part of the EcoLiner has been designed to reduce fuel consumption," Provoost continues. "That, combined with low-emission LNG instead of marine diesel, makes the EcoLiner easily the greenest inland shipping vessel in Europe. It's increasingly important for owners and clients to demonstrate sustainable operations and prepare for future 'green corridors' subject to inland emissions regulations."

The EcoLiner has a "full bag of environmental tricks":

- Damen's ACES air lubrication system which provide up to 15% fuel savings depending on speed and load
- Combines gas-electric propulsion with a proven low-maintenance shaft propulsion configuration
- Burns LNG fuel to reduce CO<sub>2</sub>, SOX, NOX and particulate emissions
- Incorporates a power management system for its four LNG fueled generator sets to optimize engine loads and reduce fuel consumption upstream and downstream
- Retractable Van der Velden FLEX tunnels reduce resistance, and make it possible to install larger, high efficiency ducted propellers
- Optional waste heat recovery system to heat or cool cargo and accommodation

Air lubrication is becoming a more recognized option for reducing fuel consumption for vessels in certain operations. Provoost explains what sets ACES apart. "People often think of air lubrication as bubbles running underneath the hull," Provoost explains. "But ACES is very different. The air is held in chambers under the hull and you push a small amount of air into the chamber to compensate for any air that might escape while underway. It's a simple concept, but delivers substantial savings."

The EcoLiner project is managed by Damen Shipyards Hardinxveld. Rob Schuurmans, Project Manager, says, "With the hull built in Romania and installation and outfitting of all main systems in the Netherlands, including all generator-gas engines, power management, propulsion and steering gear, we can make efficient use of our specialized facilities." The 110-meter-long Ecoliner is classed by Bureau Veritas and expected to be delivered this summer.

The first EcoLiner will be delivered as a tanker, however the modular design can be built to transport any commodity, including containers and dry bulk. The complete LNG installation, including tanks with bunker capacity of approximately 45 m<sup>3</sup>

LNG, is located aft of the accommodation, ensuring that the configuration forward of the cofferdam can be entirely tailored to customer-specific requirements.

The Central Commission for the Navigation of the Rhine and the United Nations Economic Commission for Europe (ADN-UNECE) has approved the gas-powered design, meaning the vessel can travel on all international inland waterways.

"The inland shipping industry has shown the most success with relatively conventional propulsion installations," Provoost says. "Our aim was to get the highest efficiency with the least maintenance—that's why we've gone for a modern take on proven engineering. Installing the retractable Van der Velden FLEX tunnel further increases fuel efficiency."

Inland shipping vessels typically use shaft tunnels to ensure optimal water flow to larger, more efficient propellers at shallow drafts. The downside of conventional tunnels is an increase in hull resistance. Moreover, inland ships are loaded and therefore sail in deeper water conditions for about 85 percent of the time. During these conditions, the Van der Velden FLEX tunnel is retracted to avoid added resistance. When sailing at shallow drafts, the Van der Velden FLEX tunnel can be deployed to ensure sufficient water flow to the propellers and maintain their efficiency.

## NEW LNG FUEL SYSTEM FOR INLAND VESSELS

At about the same time that the Ecoliner was being launched, Wärtsilä inked a deal with Cryonorm Systems BV, a Dutch developer and supplier of cryogenic vaporizers, to form a consortium to deliver LNG systems for the European inland waterway market.

The consortium plans to create a standardized LNG fuel system for inland waterway vessels in an effort to lower costs and reduce lead time for the systems in order to suit the relatively short building time required for these type of vessels.

A number of European river vessel types were analyzed, five of which were identified as potential targets for an LNG fuel system, with standards established for both newbuild and retrofit installations.

According to Bram Kruijt, Director of Inland Waterways, Wärtsilä Ship Power, the vessels analyzed were 86, 110, and 135 meters in length, each in tanker or dry cargo operation, with an LNG tank fitted in the bow or aft section of the vessel.

There are currently at least five dual fuel inland waterways vessels operating in Europe, including the four coastal tankers Argonon, the Greenstream and Greenrhine, and Sirocco, and the container vessel Eiger. Wärtsilä supplied two 6L20DF engines for the refit of the Eiger and one 8L20DF for the Sirocco in 2014.

Kruijt says that Cryonorm will manufacture the tank connection space, while Wärtsilä will provide the LNG tank. The system that the consortium will offer is based on Wärtsilä's new LNGPac gas fuel supply system. The specialized version of the new LNGPac will facilitate the use of clean burning LNG fuel by reducing costs and maintenance requirements, while also simplifying onboard installation.

By working together, Wärtsilä and Cryonorm will deliver a standardized and optimized LNGPac system capable of being integrated into an entire Wärtsilä LNG propulsion arrangement.

"By sharing the expertise of Cryonorm with the in-house knowledge and vast experience that we have gained in LNG fueling systems, we expect to facilitate and accelerate the trend towards cleaner and more efficient inland waterway shipping," says Yves Bui, General Manager, Fuel Gas Handling, Wärtsilä Ship Power.

Kruijt says he sees this development as a pilot for other inland waterway areas, with the primary focus on the River Rhine states. ■



EcoLiner features an ACES Air-Lubricated hull, delivering "substantial savings"

## FIRST LNG BUNKER BARGE FOR U.S. TO BE BUILT BY CONRAD SHIPYARD, LLC



**IT WAS AN HISTORIC DAY** for the U.S. maritime industry as Conrad Orange Shipyard, Inc., Orange, TX, a division of Conrad Shipyard, LLC, Morgan City, LA, signed a contract with WesPac Midstream LLC (WesPac), Irvine, CA, to build the first dedicated LNG bunker barge for the marine market in North America.

Plans call for the 2,200 m<sup>3</sup> capacity barge to be delivered in early 2016, initially operating in Tacoma, WA, to service shipowner Totem Ocean Trailer Express's Orca class RO/RO vessels, in addition to

other LNG-powered vessels. Each Orca Class ship will be fitted with four 12-cylinder Wärtsilä 50DF dual fuel engines.

Following initial deployment, the bunker barge will be relocated to Jacksonville, FL, to serve TOTE's 3,100-TEU Marlin Class container ships. The first of those ships is being christened this month at GD-NASSCO in San Diego, CA. The bunker barge is also expected to service other LNG-powered vessels that call at the Port of Jacksonville.



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The LNG barge will feature a tank equipped with MARK III Flex cargo containment technology, supplied by GTT (Gaztransport & Technigaz) that will be built by Conrad Orange Shipyard under GTT license. Additionally, the barge is will feature the innovative bunker mast design, REACH<sub>4</sub> (Refueling Equipment Arm, Methane [CH<sub>4</sub>]) developed by GTT, to ensure a simple and safe transfer of LNG fuel to the vessel.

GTT North America Chairman Allyn Risley, says, "GTTNA is very pleased to be involved in this collaboration and the first LNG bunker barge in North America." Johnny Conrad, Conrad Shipyard Chairman and CEO, adds, "Conrad is pleased to be part of a team that has brought this project to fruition."

The barge is being designed by Bristol Harbor Group, Inc., Bristol, RI, and classed by ABS.

WesPac worked with its affiliate Clean Marine Energy (CME), South Norwalk, CT, on developing the bunker barge project.

This initial bunker barge for TOTE is part of the WesPac/CME plan to provide an integrated LNG solution for engine conversion, infrastructure, supply, and delivery logistics to the shipping industry. As more U.S. Jones Act shipowners and operators seek to meet stringent 0.1 percent sulfur limits within ECAs by converting to LNG as a cleaner bunker fuel, WesPac/CME plans to exercise its options with Conrad to construct additional LNG fueling barges to serve other North American ports.

CME CEO Pace Ralli, CEO, says, "A comprehensive LNG supply and distribution network for the marine market in North America is critical for the shipping industry." The announcement, he adds, "shows that WesPac/CME is taking the necessary steps to complete the LNG supply chain so ship owners can be assured LNG will be available when and where it is needed."

TOTE Executive Vice President Peter Keller, says, "This sophisticated new barge, constructed by Conrad and utilizing GTT membrane technology, will serve both our Orca class vessels as they are converted to LNG and the Marlins, the world's first LNG dual fueled container vessels. TOTE is committed to caring for the environment and the communities we serve and this barge will enable us to supply our ships with LNG, a cleaner alternative fuel."



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# TUGS & BARGES



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May 12–13, 2015 | Seattle, WA

## Agenda Highlights

- Why We're Investing in ATB Tonnage
- Taking Care of Your Crew:  
Creating Wellness Programs
- Tugs for Training and Testing
- LNG Bunker Barges
- Hybrid Propulsion

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## Keynote Speaker

- Gary Faber has over 30 years' experience in the maritime industry, including extensive knowledge of marine engineering, vessel operations, salvage, and project management.
- His expertise in successfully handling projects in extreme environments extends from the Arctic to South America and the Caribbean. Gary has worked with assurance programs such as ISO and ISM, as well as in general occupational and safety programs. His accomplishments include recognition for the U.S. Coast Guard Benkert Award for Excellence in Environmental Protection.
- Prior to joining Foss, Gary was President of Seacoast Towing, which specializes in coastwise bulk petroleum transportation. He also served as Vice President for Operations at Crowley Maritime. Gary has a Bachelor of Science degree in Marine Engineering from the U.S. Merchant Marine Academy, Kings Point, NY, and holds a U.S. Coast Guard Third-Assist Engineer License.



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# TUGS & BARGES

## MARINELOG CONFERENCE & EXPO

**MARKET DYNAMICS**, a stricter regulatory regime and technological innovations are transforming the marine marketplace—and forcing tug and barge owners to rethink their business strategies. Marine Log's Tugs & Barges 2015 Conference & Expo, the premier event in North America for executives in the tug, tow and barge industry, will provide a valuable forum to gain insight into the changing market. Join us in Seattle, Washington on May 12 and 13 to network with executives and explore the trends that are redefining the way owners design, build, crew and operate their vessels in this new market of opportunities.

A key component of the conference is of course the exhibitor expo. The following is a preview of the table top exhibitors that have signed up for the Tugs & Barges 2015 Conference & Expo as of press time. [www.marinelog.com/events](http://www.marinelog.com/events)

### **ABS**

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[www.centa.info](http://www.centa.info)

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[www.cmei.biz](http://www.cmei.biz)

### **Elliott Bay Design Group**

Elliott Bay Design Group's (EBDG) team of naval architecture and marine engineering experts provides tug and barge operators with a full spectrum of services.

[www.ebdg.com](http://www.ebdg.com)

May 12–13, 2015  
SEATTLE, WA

# EXHIBITOR PREVIEW

## **Nichols Brothers Boat Builders**

Nichols Brothers Boat Builders specializes in steel and aluminum vessel construction and repair. With 50 years of experience our team is dedicated to quality craftsmanship, and excellent vessel performance.

[www.nicholsboats.com](http://www.nicholsboats.com)

## **Rapp Marine**

Rapp Marine is an industry leader in the engineering, production, and service of winches, cranes, and other deck machinery for all work vessels.

[www.rappmarine.com](http://www.rappmarine.com)

## **Robert Allan Ltd.**

Robert Allan Ltd. is Canada's most senior consulting naval architectural firm, established in Vancouver, B.C. in 1930. The company has earned an international reputation for innovative, successful designs for a wide range of ships. We provide independent professional marine consulting and design services to a worldwide client base.

[www.ral.ca](http://www.ral.ca)

## **Rose Point Navigation Systems**

Rose Point Navigation Systems provides navigation software and hardware to inland and offshore commercial operators worldwide. Rose Point ECS is the market leader in commercial navigation software.

[www.rosepointnav.com](http://www.rosepointnav.com)

## **Shamosh Equipment**

Shamosh Equipment is a leading supplier of barge pumps and hot oil heaters engineered for the tank barge industry. Established in 1979, we are authorized sales agents for: Flowserve-Byron Jackson, Leistritz Corporation and Volcanic Heaters.

## **Thrustmaster of Texas, Inc.**

Thrustmaster of Texas, Inc. designs and manufactures commercial marine propulsion thrusters at the largest thruster factory in the world. Located in Houston, Texas.

[www.Thrustmaster.net](http://www.Thrustmaster.net)

## **Valley Power Systems Northwest**

As an authorized EMD Distributor, Valley Power Systems Northwest provides complete marine propulsion systems including custom packaging, engineering and complete systems integration support.

[www.valleypowersystems.com](http://www.valleypowersystems.com)

## **Vigor Industrial**

Vigor Industrial is a leading provider of shipbuilding, ship repair and other industrial services in Oregon, Washington and Alaska.

[www.vigorindustrial.com](http://www.vigorindustrial.com)

## **Wärtsilä**

Wärtsilä provides environmentally and economically sound integrated solutions for technically complex vessels, such as research vessels, dredgers, and wind farm installation and maintenance vessels. Our technical expertise forms the basis of our ability to conceive innovative ways of improving the sustainability of maritime service and fishing industry vessels.

[www.wartsila.com](http://www.wartsila.com)

## **Will Duett**

Will Duett is a women-owned marine service company that provides cleaning and coating services to all types of tanks—onshore, dockside and offshore—including tanks on barges, rigs, cargo ships, and all types of sailing vessels. We also provide highly-skilled and safety-trained labor on specialty projects, such as environmental cleanup.

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# CONFERENCE AGENDA

May 12–13, 2015  
SEATTLE, WA

## Tuesday, May 12, 2015

- 8:00 **Registration** | Continental Breakfast | Sponsorship Available | Expo Open
- 8:40 **Technology Spotlight**  
*Johann Sigurjonsson, CEO, Rapp Marine U.S.*
- 9:00 **Keynote Address**  
*Gary Faber, Senior Vice President, Foss Maritime Corp.*
- 9:30 **What's Happening in the New Congress?**  
*Jon Waldron, Esq., Partner, Blank Rome LLP*
- 10:00 Coffee Break | Sponsorship Available | Expo Open
- 10:30 **Prospects for Oil and LNG Exports and Impact on U.S. -Flag Shipping**  
*Charlie Papavizas, Esq., Partner, Winston & Strawn LLP*
- 11:00 **EPA Tier 4 Compliance**  
*Jon Burton, Sr., Esq., Senior Marine Applications & Installation Engineering Specialist, Caterpillar Marine Power*
- 11:30 **Business Case Economics: Tier 4, Category 2 Engines vs. Tier 3, Category 3 Engines, Diesel, LNG and HFO + Scrubbers**  
*Quentin Stewart, Sales Manager, Ship Power, Wärtsilä North America*
- 12:00 Luncheon | Sponsorship Available | Expo Open
- 1:30 **Grants & Funding for Your New Clean Diesel**
- 2:00 **Panel: The First LNG Bunker Barges and LNG-Fueled Tugs and Towboats**  
*Johan Sperling, Vice President, Jensen Maritime; John Waterhouse, Chief Concept Engineer, Elliott Bay Design Group; Rich Delpizzo, Regulatory Manager, Global Gas Solutions, ABS; Greg W. Beers, P.E., President & Principal Naval Architect, Bristol Harbor Marine Group, Inc.*
- 3:00 Energy Break | Sponsored by DNV-GL | Expo Open
- 3:30 **Hybrid Propulsion Panel**  
*Bob Kunkel, President, Amtech; John Eldridge, Director of Business Development-Marine, AKA Group*

- 4:30 **Our New Class of Tug**
- 5:00 Cocktail Reception | Sponsorship Available | Expo Open
- 6:00 Adjourn

## Wednesday, May 13, 2015

- 8:00 Continental Breakfast | Sponsorship Available | Expo Open
- 9:00 **Why We're Investing in ATB Tonnage**
- 9:30 **Taking Care of Your Crew: Creating Wellness Programs**  
*Emily Reiblein, Operations Integrity, Crowley Maritime Corporation*
- 10:00 Coffee Break | Sponsorship Available | Expo Open
- 10:30 **Tugs for Training and Testing**  
*Ron Burchett, President, Burchett Marine*
- 11:00 **Update on Guidance for Use of LNG as a Marine Fuel**
- 11:30 **Bow Steering Module Concept**  
*Gregory E. Castleman, President, Castleman Maritime Corporation*
- 12:00 Luncheon | Sponsorship Available | Expo Open
- 1:30 **Title XI and Small Shipyard Grants**  
*Owen Dougherty, Associate Administrator for Business and Finance Development, U.S. Maritime Administration; Isak Hurst, Esq., International Maritime Group, PLLC*
- 2:30 **Design for an LNG-fueled Towboat**  
*Greg W. Beers, P.E., President & Principal Naval Architect, Bristol Harbor Marine Design; speaker from Conrad Shipyard; speaker from GTT North America*
- 3:30 Adjourn
- Moderator:** *John R. Snyder, Publisher & Editor-in-Chief, Marine Log*

Program subject to change

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# MOU SIGNING CEREMONY

## ClassNK AND MPA

### &

## GREEN AND SMART SHIPPING SEMINAR

Andrew Tan of the Maritime and Port Authority of Singapore (left) and Yasushi Nakamura of ClassNK at a recent signing ceremony in Singapore



## Global maritime R&D in Singapore

ClassNK's new research center to carry out projects focused on ship safety and environmental sustainability

Special to Marine Log

**C**lassNK's new Global Research and Innovation Center in Singapore is its first research center outside Japan. The opening of the center this past February coincided with a new Memorandum of Understanding (MOU) with the Maritime and Port Authority of Singapore (MPA) to carry out joint R&D projects focused on enhancing ship safety and environmental sustainability.

Strategically located at the crossroads of East and West trade lanes, Singapore is one of the busiest ports in the world for commercial shipping and maritime services, as well as being South East Asia's leading transshipment port for container traffic. In 2014, Singapore's container throughput reached a record 33.9 million TEU, with the port also remaining the world's top bunkering port. The country's position as a global maritime hub has seen it play an increasingly important role in maritime R&D activities.

As the driving force behind Singapore's port and maritime development, the MPA's mission is to attract a core group of ship owners, operators and maritime service providers to raise Singapore's profile as a premier global hub port and International Maritime Center (IMC), as well as to advance and safeguard Singapore's strategic maritime interests.

ClassNK has been providing classification services in the country

since 1967. ClassNK's role in Singapore greatly expanded over these years, and new focus was given to its regional R&D activities in 2011, when an MOU was signed together with Nanyang Technological University (NTU). Since then, ClassNK has collaborated with the Energy Research Institute @NTU (ERI@N) in many projects related to the maritime industry.

The opening of the Global Research and Innovation Center (GRIC) represents a milestone in the continuing expansion of ClassNK's R&D activities not only in Singapore, but internationally. GRIC provides the industry with the infrastructure to develop innovative solutions, and acts as a bridging point for ClassNK, the city-state's Institutes of Higher Learning (IHL), international research institutes, and world-renowned shipping companies. Singapore's position as a global maritime hub will help make GRIC and its projects accessible to organizations around the world.

### ADVANCING SCRUBBER TECHNOLOGY

From the outset, GRIC will play a pivotal role in advancing a new joint research project launched in December 2014 to develop an exhaust gas cleaning system (EGCS) to control SOx emissions from ships outside emission control areas (ECAs). ClassNK will work

together with Nippon Yusen Kabushiki Kaisha (NYK Line), the Monohakobi Technology Institute (MTI), NTU, SembCorp Marine Technology Pte Ltd, and a leading EGCS manufacturer to simplify EGCS operations, reduce costs and unit sizes, and minimize CO<sub>2</sub> emissions for installation across a range of vessel types.

Also publicly announced is an upcoming pilot scale demonstration project to develop a Zero-Emission Desulphurization

process for Maritime applications (ZEDSMart). Building on these opening projects, GRIC will quickly expand its scope of maritime research and its primary work-plan includes: safety projects related to vessel structural integrity and fatigue, data analytics to assist in real-time anomaly detection of machinery, real-time monitoring of emissions and condition-based monitoring of structures for ship and machinery operations, and applied research

in alternative fuel engine technologies. GRIC's mandate also includes tackling challenges faced by the maritime industry such as onboard noise and vibration.


GRIC will engage in a feasibility study in the southern waters of Singapore for the possibility of developing a marine renewable energy test site. In addition to tidal energy generation related R&D topics, this test site will be a platform for energy storage and shore power supply R&D that in turn will benefit the maritime industry and our harbors. Ideas for a network of battery charging stations to support a future generation of hybrid electric harbors and workboats are already being considered as part of the shore supply research.

A number of centers and consortia have also looked into renewable marine energy testing facilities, but GRIC's new feasibility study envisages the world's first testing facility for renewable marine energy technologies in high temperature tropical waters.

"Given the enormous potential of the ocean as a source of energy and the ever-increasing demand for cleaner energy to mitigate climate change, there is a growing need from the industry for high-quality technical services that can support the practical development of new renewable energy technologies", comments Hirofumi Takano, Operating Officer and General Manager of the Renewable Energy Department.


Running from February 2015, the 18-month study will assess the feasibility of establishing a 1/5 to 1/10 scale testing facility in the waters off the coast of Singapore, including surveys of tidal forces, as well as environmental and operational viability assessments. This work will be carried out by a consortium led by ClassNK and ERI@N, with support from other leading research institutes and consultants including the European Marine Energy Centre (EMEC).


"GRIC represents the next step in ClassNK's global research efforts", says Yasushi Nakamura, Representative Director and Executive Vice President. "GRIC provides much-needed infrastructure for maritime and offshore projects, and its location in Singapore also ensures that it is accessible to potential research partners around the globe. Projects are already underway to enhance ship safety and environmental sustainability with joint research partners. With the establishment of GRIC, the industry can expect to see even more innovative solutions from ClassNK and our international partners in the future." ■



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# Taking it to the next level

Diesel engine manufacturers reach EPA Tier 4 compliance

Compiled by Marine Log Staff

“That’s quite an accomplishment for a medium-speed engine,” says Rob Van Solingen, Product Manager, Marine, GE Transportation. The accomplishment that Van Solingen is alluding to is the recent U.S. EPA Tier 4 Certification of GE Marine’s 12V250 diesel engine. What’s impressive is that GE Marine uses in-engine technology to achieve certification.

Van Solingen says the GE V250 uses a combination of technologies to help operators meet EPA Tier 4 compliance. It combines Exhaust Gas Recirculation (EGR) technology, with high-pressure common rail injection, and two-stage turbocharging.

According to Van Solingen, GE’s EPA Tier 4 solution is the result of eight years of development by the company’s engineering teams and centers of excellence. Back in 2005, GE unveiled the V250 medium-speed engine platform to replace its well-proven, but decades-old V228 engine. While the four-stroke, medium-speed V228 diesel engine meets MARPOL Annex VI Tier II and U.S. EPA Tier 2 requirements, GE realized it needed a new platform to meet the emerging stricter emissions standards in the decades ahead.

GE Marine sees its use of EGR, high-pressure common rail injection, and two-stage turbocharging as a big advantage over the use of Selective Catalytic Reduction (SCR) technology that requires urea-based after-treatment.

Those advantages are highlighted by a study conducted by naval architectural firm Jensen Maritime for GE. The study compares GE’s U.S. EPA Tier 4 and IMO Tier III compliant in-engine, urea-free solution to a competitor’s solution that requires urea-based after-treatment. It concluded that, for operation on a typical line-haul tug, GE’s solution:

Takes up about only 25% of the engine room space required by the competitive solution;

- Weighs about only 25% of the competitor’s solution; and
- Does not require additional onboard equipment/storage for urea or dockside support infrastructure for urea storage and processing.

GE is also working towards U.S. EPA Tier 4 and IMO Tier III Certification for its 16-cylinder V250 and 6- and 8-cylinder L250 marine diesel engine models that also use non-SCR technology to reduce key emissions by more than 70%. Van Solingen fully expects those engines to be certified this year.

Orders for the new EPA Tier 4 compliant engine line are already rolling in. GE Marine has sold two 12V250 diesel engines to Rein-aer for installation in one of their ATB tugs under construction at Senesco Marine in Kingston, RI; two 12V250 engines for Harvey Gulf International’s new Multipurpose Field Support Vessel under construction at Eastern Shipbuilding, Panama City, FL,



Scania engines are popular for pilot boats and wind farm vessels

and five 12V250 engines for Oceaneering's subsea construction vessel under construction at BAE Systems, Mobile, AL, shipyard. Norwegian ferry operator Bastø Fosen has also ordered six eight-cylinder in-line engines for three newbuild ferries under construction in Turkey and two 16-cylinder V engines to repower two of its existing ferries.

## TOP SCORING FERRIES OPT FOR ROLLS-ROYCE GAS ENGINES

And speaking of ferries, Rolls-Royce gas engines have powered Fjord Line ferries Bergensfjord and Stavangerford to the top two positions in the World Ports Climate Environmental Ship Index (ESI).

The Liquefied Natural Gas (LNG) fueled ferries each feature four Rolls-Royce BV12PG gas engines that drive Rolls-Royce PRO-MAS integrated rudder and propellers.

Of the 3,194 ships currently on the ESI list, Bergensfjord scored 93.9 points followed by sister vessel Stavangerford with 93.5. Only fifty vessels had a score higher than 49.

"It is clear that the Rolls-Royce engines have made these ferries more environmentally friendly than other vessels on the ESI list," says Morten Larsen, Fjord Line's Technical & Nautical Director.

John Knudsen, President Commercial Marine, Rolls-Royce says, "One reason for the high ESI score is that the Rolls-Royce Bergen engines only use LNG and do not need oil fuel for pilot injection. The result is that the BV12PGs emit zero oxides of sulfur, reduce oxides of nitrogen by 98% and cut carbon dioxide emissions by 23%."

The Environmental Ship Index, part of the World Ports Climate Initiative, is used by ports to reward shipowners for their commitment to greenhouse gas emissions reduction. Shipowners voluntarily add their ships to the index on the basis that ports offer favorable terms to those vessels that score highly. Cleaner ships help ports not only to reduce GHG emissions, but also cut NOx.

## CHOUEST NEWBUILDS GET CAT POWER

Meanwhile in the offshore sector, Caterpillar Marine, Lafayette, IN, says that Edison Chouest Offshore (ECO) has selected Cat Tier 4 Final C280-16 generator sets for two new diesel-electric Ice class Multipurpose Service Vessels under construction at ECO's LaShip shipyard in Houma, LA.

The ECO newbuilds represent a milestone achievement for Caterpillar Marine in that they incorporate one of the highest horsepower, Tier 4 solutions in the market, as well as one of the largest diesel electric propulsion (DEP) configurations Cat has ever produced. Four Cat C280-16 generator sets, each rated at 5,060 kW at 900 rev/min will power each MPSV.

Bart Long, Caterpillar Marine Key Account Manager, says, "We



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value delivering innovative, sustainable solutions for the marine industry and we're proud to provide Chouest with reliable power that will meet Tier 4 Final emission standards."

Caterpillar Tier 4 Final marine technology uses after-treatment combined with a fuel efficiency optimized engine to meet the low NOx emission standards. The C280 Tier 4 Final solution employs SCR technology, which Cat says "provides customers with the lowest possible owning and operating costs." The SCR module was designed with the engine room in mind with compact dimensions.

"The C280 generator sets are incredibly popular in offshore applications, offering customers the lowest possible emissions technology in the industry while also providing the lowest owning and operating costs," says Nathan Kelly, Caterpillar Marine Product Definition Engineer. "Customers come to us knowing we'll engineer a solution to successfully perform for their specific needs."

#### QUAD CONCEPT FOR WIND VESSELS

For planning or displacement vessels or auxiliary applications, Scania offers a complete marine engine concept to meet the toughest demands of reliability, performance and operating economy.

In addition to its 16-liter V8 and the 13-liter inline six-cylinder, Scania's marine engine range also comprises a range of 9-liter inline five-cylinder units. Intended for propulsion and auxiliary use, the engines are all based on Scania's modular engine platform, which is used for marine, industrial, power generation, truck and bus applications worldwide.

The engines build on a long tradition of compact power packs that share both technology and architecture with Scania's truck and bus engines.

Used widely in workboats, Scania's 13-liter V8 marine engine

ranges from 220 to 750 hp (162 kW to 551 kW) (propulsion) and 269 kW to 426 kW (auxiliary).

With Scania's Quad Power concept, operators can opt for four V8 marine engines rather than installing costly individually tailored twin high-power engines. This concept has already been used in applications such as for wind farm supply vessels operating in the North Sea.

One of the distinct advantages of Scania's V8 engines is that ancillaries can be effectively accommodated inside the compact "footprint" of the engine.

In addition, engine repair is simplified and can be carried out by a single service technician, since each cylinder has its own head. This combined with wet cylinder liners makes engine overhauls much easier in confined spaces.

The output for Scania's 16-liter marine propulsion engines range from 550 hp to 1,000 hp for patrol craft. For auxiliary use the range spans from 430 to 511 kW (50 Hz) and 468 to 596 kW (60 Hz). Scania's engines are now highly competitive with engines well above 16 liters.

The torque ratings of up to 3,253 Nm (auxiliary) and 3,340 Nm (propulsion) are particularly high for this output class. This ensures ample performance even at low revs, while facilitating running at favorable revs in all conditions, including high sea and high load.

For propulsion purposes, Scania's 13-liter inline engine produces from 400 hp for continuous use and up to 750 hp for patrol craft use. For auxiliary use the engines range from 323 kW at 50 Hz up to 426 kW at 60 Hz. Installation principles and maintenance requirements are the same as for the 16-liter V8.

The 9-liter inline five-cylinder engines are based on the same engine platform as its siblings, the 16- and 13-liter units. Designed

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for tough operating conditions with a focus on uptime, the engines have low life-cycle cost and the platform features engines for hard-working vessels.

## EXTENDED MAINTENANCE INTERVALS

Scania's familiar centrifugal oil cleaner effectively removes small particles from the lubrication oil, while reducing the size of the replaceable filter cartridge. The Scania Saver ring, placed at the top of each cylinder liner, reduces carbon deposits on the edge of the piston crown and reduces cylinder liner wear. In spite of higher performance and tighter emission levels, Scania has been able to raise maintenance and oil change intervals by 25% in comparison to its predecessor.

## "A LEADER, NOT A FOLLOWER"

"Protecting the environment is one of our core values," says Marcia Kull, Vice President, Marine Sales for North America, Volvo Penta of the Americas. "This drives our intense focus on emissions and fuel efficiency. We believe that as engine manufacturers we are part of the problem, and we have a responsibility to lead the way in developing solutions."

Volvo Penta is a part of the Volvo Group, one of the world's top manufacturers of diesel engines for trucks, buses, construction machines and industrial applications. "We are able to leverage those resources when it comes to developing highly efficient diesel engines for the marine market," says Kull.

"Likewise," she says, "our gas engines are derived from GM's Gen V automotive technology, making us the beneficiaries of GM's enormous R&D facilities and rigorous quality standards."

Volvo Penta's position when it comes to fuel efficiency and

emissions is to "be a leader and not a follower," says Kull. She points to the early release of its EPA Tier 2 and Tier 3 compliant engines.

Volvo Penta's current marine engines meet Tier 3 levels, as well as CARB and pending EU standards, by a considerable margin. "When we moved from Tier 2 to Tier 3 several years ago, we reduced particulate matter by 40 percent and NOx by 20 percent."

Its Tier 3 compliant marine diesels are available as inboard diesel, ranging from 180 to 800 hp and IPS diesel, from 300 to 800 hp.

Volvo Penta Tier 3 marine engines use various injection phases that fine tune the engine, with either common-rail or unit injection.

Volvo Penta is already supplying Tier 4 final diesels for the over-the-road and off-road sectors, which should make it easy to move from Tier 3 to Tier 4 in the marine sector since the technology is already available in-house.

The Tier 4 final standard will come into effect for marine engines in 2017. Currently the Tier 4 regulations only apply to marine engines over 600 kW (816 hp)—above the company's current marine product range.

"Our IPS drive technology, which is now starting to gain traction in the commercial marine sector," notes Kull, "is achieving an impressive 30 percent improvement in fuel efficiency and CO<sub>2</sub> emissions over traditional inboards." The first two Volvo Penta commercial marine IPS installations in North America took place last year, in a new patrol boat for the Massachusetts Environmental Police and the new award-winning offshore emergency response craft for the Charleston Pilots.

Volvo Penta and the Volvo Group have active R&D programs underway to evaluate and develop engines running on alternative fuels, including LNG, CNG, DME and others. It has also supplied marine gensets for diesel-electric hybrid drives in Europe. ■



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# The New MarineYellowPages.com



The image shows three mobile devices displaying the MarineYellowPages.com website. The tablet in the background shows the desktop version with a navigation bar, a search section, and a large banner for the 'TUGS & BARGES' conference. The two smartphones in the foreground show the mobile-optimized version of the site, with one displaying a list of businesses and the other displaying a map view.

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## Hart takes the helm at the National Transportation Safety Board



**CHRISTOPHER A. HART** has been sworn in as the 13th Chairman of the **National Transportation Safety Board (NTSB)**. He had been serving as Acting Chairman since April 16, 2014. Prior to that, he was Vice Chairman and a board member.

**KEN BLOCH SORENSEN** has been appointed President and Chief Executive Officer of Canadian-flag shipowner **Algoma Central Corporation**. Sorensen previously worked with the Maersk Group, United Arab Shipping Co., and IPSA Capital Limited.

Propulsion and steering system manufacturer **Schottel** has named **JULIO CARRASQUILLA MARTINEZ** Managing Director of its new subsidiary based in Cartagena de Indias, Colombia. Schottel de Colombia is expected to further strengthen and extend the group's position in South and Central America. Carrasquilla previously worked at Schottel do Brasil as a sales agent.



**ROBERT SOCHA** has been named **Baker Marine Solutions'** Vice President Business Development for the company's domestic U.S. and international operations.

Socha brings with him over 35 years of experience in the industry, including 16 years with Bollinger Shipyards.

**BC Ferries** has named **DENNIS M. DODO** Chief Financial Officer. Most recently, he served as Vice President of Shared Financial Services for Ontario Power Generation.

**JAY T. HUFFMAN** has joined **Blank Rome LLP** as an Associate in the Maritime, International Trade, and Public Contracts group. Huffman's practice has focused on maritime and energy-related litigation matters, including state and federal cases involving MARPOL violations, contamination, Jones Act, and LHWCA defense. Huffman will also serve as a member of Blank Rome's Maritime Emergency Response Team.



Shipbuilder **Strategic Marine** has named **JIM FRASER** and **ROB BOERSMA** as Senior Executives in key international maritime markets. Fraser will be based in

Scotland and focus on the United Kingdom market. Boersma (pictured) will be based in Singapore and will specialize in developing the crew and workboat markets in the region.

Recently retired President of Genco Shipping & Trading, **GERRY BUCHANAN** has been appointed Managing Director of **The Liberian Registry's** dedicated office in Hong Kong.

**W&O** has realigned its leadership team, reinforcing its commitment to providing its customer base with technical, cost-saving and regulation-compliant solutions. **FRED LOOMIS** has been named Vice President of Technical Sales. Meanwhile, **TODD NESTEL** will serve as Vice President of Engineered Solutions.



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## WÄRTSILÄ POWER for jack-up barges

**WÄRTSILÄ WILL PROVIDE** power to two new jack-up barges currently under construction at Shanghai Zhenhua Heavy Industries (ZPMC) shipyard in Chang Xing Island, China. The ships, which are being built for the National Petroleum Construction Company (NPCC), United Arab Emirates, will supplement NPCC's fleet of offshore vessels. NPCC provides EPIC solutions to the oil and gas industry.

Under the contract, Wärtsilä will supply power generation and electrical and automation (E&A) solutions. Each vessel will be equipped with three 8-cylinder Wärtsilä 20

generating sets, an emergency generating set and the full E&A system. Wärtsilä will deliver the equipment this summer.

According to Wärtsilä, the use of an integrated solution from a single source optimizes the vessel's operating efficiency. Simultaneously, it also reduces delivery risks for the yard.

"Wärtsilä's comprehensive portfolio of solutions enables this kind of integration, which benefits the operation of the vessel in terms of efficiency and helps the yard reduce its scheduling risks," says Hans Laheij, Area Sales Director, Wärtsilä Ship Power.

[www.wartsila.com](http://www.wartsila.com)

## KONGSBERG ACQUIRES German sensor specialist

**KONGSBERG MARITIME, AS**, has acquired the remaining 90% of shares of Contros Systems & Solutions GmbH. Established in 2006, Contros is a Germany-based underwater chemical sensor specialist that develops, produces and markets underwater sensor systems to detect dissolved gasses—such as CO<sub>2</sub>—as well as pH and total alkalinity (TA).

Under the acquisition agreement, Contros will be part of Kongsberg Maritime's Subsea Division's Subsea Monitoring business.

The acquisition will enable Kongsberg to strengthen its ability to "provide integrated solutions for existing and emerging applications," says Bjørn Jalving, EVP of Kongsberg Maritime's Subsea Division.

Back in 2013, Kongsberg inked a deal with Contros, taking 10% of Contros' shares. The deal to acquire all of Contros' shares was a "strategic move forward," says Daniel Esser, Managing Director of Contros. The move secures Contros' growth and development in sensor technology. [www.km.kongsberg.com](http://www.km.kongsberg.com)

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## SENESCO INVESTS IN AUTOMATED WELDING

to help increase production and efficiency



**SENESCO MARINE**, North Kingstown, RI, knows the key to growing in the highly competitive shipbuilding business is investing in your company. That's why the shipyard, which does both new construction and vessel repair, has struck a deal for Pemamek's PEMA Welding Portal to help boost productivity and efficiency.

The PEMA WeldControl™pend.200

Vision system will be used for the welding of double bottoms and subassemblies. The process of welding double bottoms can be time consuming and especially tough on workers. Senesco Marine says, automated welding was the answer to help make the process more productive and ergonomic. The PEMA WeldControl Vision system uses two Yaskawa robots and Lincoln Electric Power Wave power sources to integrate all welding systems.

Senesco Marine also opted for Pemamek's twin robot welding gantry. The new gantry would enable Senesco Marine to meet its need for increase capacity; improve productivity and reduce the man-hours required per vessel.

"The next step for Senesco Marine is to produce not only quality built vessels but at an increased pace to meet the needs of our customers," said Michael J. Foster, Vice President and General Manager at Senesco Marine. "To be able to do this we are making the investment with PEMA to increase the throughput thus reducing the timeframe required to complete these vessels, which leaves room for even more opportunities." [www.senescomarine.com](http://www.senescomarine.com)

## TRACK YOUR FUEL USE

with software solution operations for inland

**FUEL FLOW COMPUTER** provider FloScan believes its DataLog Fuel Monitoring Software could be the solution for commercial operators required to accurately track a vessel's fuel consumption for fuel tax purposes under the Inland Waterways Revenue Act—a complex process considering operators also have to take note of taxes imposed by the state and local jurisdictions.

The software comes with FloScan's FloNET Fuel Monitoring System, which has geo-fencing capability. Using GPS in combination with geo-fencing enables the system to automatically track the vessel's fuel used by geographic area, the region's regulatory authority and its tax rate.

FloScan says its DataLog software can provide real time tracking of a vessel's fuel consumption broken down by propulsion and non-propulsion engines, engine operational data and GPS-based vessel positioning. The collected data can be used in government tax filings.

[www.floscan.com](http://www.floscan.com)

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## GEA WESTFALIA'S NEW UV BALLAST WATER treatment system makes debut in cruise market

**GEA WESTFALIA** Separator Group GmbH received its first order for the installation of its BallastMaster marineX UV ballast water treatment systems on two cruise ships with an option for a third vessel.

The ships, currently under construction at an undisclosed European shipyard, will each be quipped with one BallastMaster marineX system. Under the contract, GEA Westfalia will supply 10 GEA type OSE separators for fuel and lube treatment with CFR (Certified Flow Rate) and two ViscoBooster units for optimum fuel conditioning.

The compact-size system, which was developed in cooperation with Canadian UV system specialist Trojan Technologies, has a throughput capacity of 500 m<sup>3</sup>/hr. The system uses a two-phase operation with mechanical pre-filtration and subsequent disinfection of the ballast water by UV treatment without using or generating chemicals.

The BallastMaster marineX is IMO type approved and has received U.S. Coast Guard AMS acceptance. The system is approved to the lowest level of UV permeability with a maximum flow rate-and is applicable for fresh water, brackish water and sea water.



The system, however, isn't just for new-builds. According to GEA's Michael Fibbe, the system provides flexibility when it comes to its configuration and is "suitable for retrofitting in existing cruise liners."

## WESMAR BOW THRUSTERS for new Circle Line ferries

**NEW YORK-BASED** Circle Line Sightseeing Yachts' three new ferries will feature heavy-duty bow thrusters from WESMAR, Woodinville, WA.

Designed by DeJong & Lebet, the 600-passenger vessels are being built by Gladding-Hearn Shipbuilding and will be similar to previous ferries operated by Circle Line except they will have an additional deck to conform to new U.S. Coast Guard regulations.

Each ferry will have a WESMAR 125 hp model V2-20 stainless steel dual prop counter rotating thruster. The ferries will travel at speeds up to 16 knots and will make trips that are 2 to 3 hours long.

"Circle Line vessels dock on the Hudson side of New York Harbor, where they navigate heavy marine traffic and cross winds," says Peter Duclos, President of Gladding-Hearn. "The task of holding tight to load and unload 600 passengers is critical to safety and to comfort, so the WESMAR bow thrusters are an important part of the design," says Duclos.

[www.wesmar.com](http://www.wesmar.com)

## Veson, AWT to streamline COMMUNICATION AT SEA

**A COLLABORATION** between Veson Nautical, Boston, MA, and Applied Weather Technology, Inc. (AWT) will provide software that facilitate communications between captains and shore-based managers. AWT provides fleet optimization services and onboard voyage management software.

According to AWT, the new solution will deliver time-savings to vessel captains since they'll be able to send a single at-sea report to both the onshore operator and AWT via Veson's Veslink.

Veslink streamlines workflow and protects data by enabling the user to generate a single integrated report for the onshore office. "In one click," says AWT, "operators using both AWT and Veslink can deliver critical data to both the AWT weather routing service and voyage management through Veslink and IMOS."

AWT CEO Haydn Jones says the goal is to reduce the load on ship's masters. Jones adds, "In today's world of ever deeper and closer operational integration of ship and shore-based management, this is a step in the right direction."

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# Deepwater Horizon Oil Spill

## *Economic and Property Damages Settlement*

The Deadline to file a Claim is June 8, 2015

**June 8, 2015** has been established as the deadline to submit a claim in the Economic and Property Damages (“E&PD”) Settlement with BP Exploration & Production Inc. and BP America Production Company (“BP”) related to the Deepwater Horizon Oil Spill. So if you are eligible to file a claim, you must act soon.

### **WHO IS INCLUDED?**

The E&PD Settlement Class includes people, businesses, other entities, and properties in the states of Louisiana, Alabama and Mississippi, and certain counties in Texas and Florida, that were harmed by the Deepwater Horizon oil spill that occurred on April 20, 2010. The website [DeepwaterHorizonSettlements.com](http://DeepwaterHorizonSettlements.com) has detailed descriptions and maps of the included geographic locations to help you determine whether you are a part of the E&PD Settlement Class. Additionally, you can call 1-866-992-6174 or e-mail [questions@DeepwaterHorizonEconomicSettlement.com](mailto:questions@DeepwaterHorizonEconomicSettlement.com) to find out if a geographic location is included.

### **WHAT ARE THE PAYMENT CATEGORIES?**

The settlement provides payments if you had economic loss or property damage because of the Deepwater Horizon oil spill. By submitting a claim, you can request a payment in one or more of the following seven categories:

- Economic Damage ■ Loss of Subsistence
  - Vessel Physical Damage
  - Real Property Sales Damage
- Vessels of Opportunity Charter Payment
  - Coastal Real Property Damage
  - Wetlands Real Property Damage

**Economic Damage** payments are available for Individuals and Entities that lost profits or earnings as a result of the Deepwater Horizon Incident. **Coastal Real Property** payments are available for property that was physically damaged in connection with the Deepwater Horizon Incident. Detailed descriptions of all seven categories are available at the website.

There is no limit on the total dollar amount of the E&PD Settlement. All qualified and timely claims will be paid in full once they are approved. The Settlement also allowed for Seafood Compensation claims, but the deadline for those claims has passed.

### **HOW DO I REQUEST A PAYMENT?**

You must submit a Claim Form to request a payment. You can get a copy of the various Claim Forms by visiting the website or by calling 1-866-992-6174. Claims can be submitted online or by mail. If you have questions about how to file your claim, you should call the toll-free number for assistance. The claims process can be complex, so if you are eligible to file a claim, you should act now so you may complete your claim before the **June 8, 2015** deadline.

**DeepwaterHorizonSettlements.com ■ 1-866-992-6174**

**SHIPYARD CONTRACTS** Marine Log welcomes your input. If you would like to report any new contracts or changes to our listings, please e-mail: [marinelog@sbpub.com](mailto:marinelog@sbpub.com). Some contract values and contract completion dates are estimated. Information is based on data on or about March 1, 2015. A "C" after a vessel type indicates a major conversion, overhaul or refit. A complete listing on shipbuilding contracts is available on our new Shipbuilding Intelligence website, [www.shipbuilding.marinelog.com](http://www.shipbuilding.marinelog.com)

SHIPYARD	LOCATION	QTY	TYPE	PARTICULARS	OWNER/OPERATOR	EST. \$ MIL	EST. DEL.
<b>RECENT CONTRACTS</b>							
Diversified Marine	Portland, OR	1	Tug	80 ft x 36 ft Lela Franco	Harley Marine Services		2015-1Q
Gladding Hearn	Somerset, MA	3	Ferries	165 ft x 34 ft	Circle Line Sightseeing		2017
Kvichak Marine	Seattle, WA	1	Research Vessel	60 ft x 24 ft	CA Dept. of Water Res.		2016-1Q
<b>DELIVERIES</b>							
All American Marine	Bellingham, WA	1	Ferry	105 ft x 33 ft	King's County, WA		2015-1Q
Austal USA	Mobile, AL	1	JHSV	USNS Trenton (JHSV 5)	U.S. Navy	\$350	2015-1Q
Diversified Marine	Portland, OR	1	Tug	80 ft x 36 ft Michelle Sloan	Harley Marine Services		2015-1Q
Main Iron Works	Houma, LA	1	Tug	100 ft x 38 ft Becky S	Bisso Towboat Co.		2015-1Q
<b>PENDING CONTRACTS</b>							
Aker Philadelphia	Philadelphia, PA	4	Options	50,000 dwt	Crowley Maritime	\$500	2017
BAE Systems Southeast	Mobile, AL	2	dump scows	7,700 cu. ft.	Great Lakes Dredge		Options
BAE Systems Southeast	Jacksonville, FL	1	tug	141 ft x 46 ft, 12,000 bhp	Seabulk Tankers Inc.		Option
Candies Shipbuilders	Houma, LA	1	subsea vessel	108m x 22m, MT6022	Otto Candies LLC		Option
Gulf Coast Shipyard	Gulfport, MS	4	PSVs	dual fuel, 302 ft x 64 ft	Harvey Gulf Intl. Marine		Options
Kvichak Marine	Seattle, WA	30	skimmers	30 ft 3 in x 9 ft 8 in	U.S. Navy		Opt. to 2019
Leevac Shipyards	Jennings, LA	2	PSVs	300 ft x 62 ft	Tidewater		Options
TBD			OPCs	Offshore Patrol Cutters	U.S. Coast Guard		RFP/Phase I
TBD		2	LASH carriers	convert steam to LNG	Horizon Lines		RFP
TBD		1	double-end ferry	70-car similar to Pocohontas	VDOT	\$25	2018-2020
TBD		6	car ferries	1,200 PAX (convert to LNG)	Washington State Ferries		RFP issued
TBD		3	double-end ferries	4,500 PAX	NYCDOT	\$309	EBDG design
TBD		2	passenger ferries	135 ft, 400 PAX, 27 knots	WETA		RFP issued
TBD		3	pass./vehicle ferries	1,000 PAX/100 vehicles	DRBA	\$101	2018-2021
TBD		1	school ship	National Security Multi-Miss.	U.S. DOT	\$5	Design

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# THE BOOK OF GENESIS and THE SHIPPING MARKETS: Have we come to the end of the downturn?

**IN CHAPTER 41 OF GENESIS** (King James Version), the famous story is told of Joseph's interpretation of Pharaoh's dream, to the effect that seven years of great plenty throughout the land of Egypt would be followed by seven years of famine. In that famous story, when Pharaoh perceived the wisdom of Joseph's counsel, he, among other things, took the ring from his hand and put it on Joseph's hand, arraying him in vestments of fine linen, and also put a gold chain about his neck.

Maritime researchers, some of whom did in fact predict the disastrous markets that came to pass after 2007, have not been similarly treated. Perhaps this is because there are no wise Pharaohs around these parts, these days.

It has been pointed out that the current depressed markets are not really as bad as those that we saw some thirty years ago, during the last commercial shipping swoon, because asset prices have not collapsed the way they did back then. We are, coming up on the seventh anniversary of the start of this period of semi-biblical slump. Will it end after seven years? We've had five years of financial crisis, and the dry bulk market shows no sign of recovery.

While I may not win Pharaoh's gold ring, I do believe that recovery for at least some sectors is within sight. The most important imponderable is the rate of scrapping; if we can get the global bulker fleet down to a size that is somewhat equal to demand, I believe that there will be a considerable improvement about two years from now. That would get us to seven years, just as Joseph predicted.

I also believe that there will be more consolidation among commercial owners and managers, leading to the elimination of the oversupply of ships, and an end to the

excessive fragmentation of markets. It has been noted that more than 80% of owners now control fleets of less than ten ships. The few large operators are at a considerable advantage in such a situation.

Why is this likely to happen? The answer, of course, is that most large-scale shipping investment is being sponsored by private equity, which demands a more intelligent level of ship management. Private equity has a growing role in the management of existing dry and liquid fleets, and if the major PE players want a merger, they're going to get it.

The urge to merge, or to put it more politely, to consolidate, means that someone will lose his (rarely her) job. That's what happens in a merger scenario. But it is the way forward for the industry, if it is to emerge from the doldrums of today. The fact is that even with the retrenchment of China trade, the global economy is now recovering, led by better times in the United States and Europe. It's only a matter of time before the demand curve and the oversupply curve meet, and that is when we will start singing "Happy Days are Here Again".

At which point, will the pernicious cycle of oversupply begin all over again?

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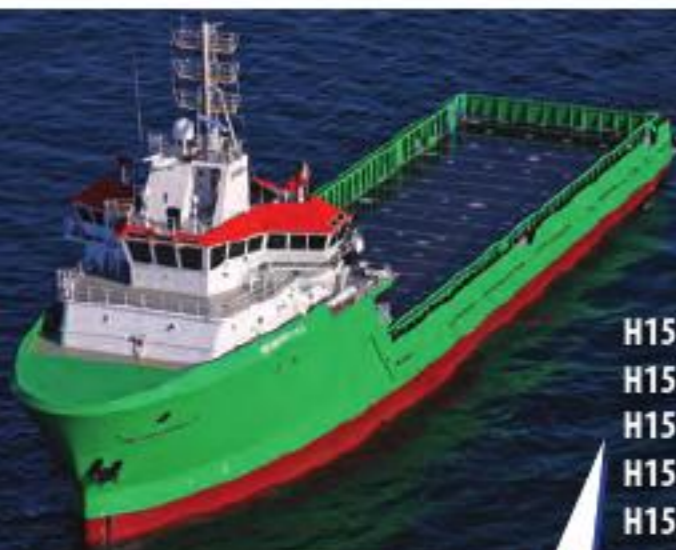
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